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ABDOMINAL SURGERY IN CHILDREN *

BY

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The subject of my address has interested me for many years, and I have been brought into contact with it for a quarter of a century in the Belfast Hospital for Sick Children. In this hospital one had the opportunity of learning surgery from Robert Campbell—a pioneer in general surgery with a very special interest in children—and, looking back over the twenty-five years, we appear to have made very little progress. Possibly our results are slightly better, but this is due to improved anaesthesia and diagnosis and to a more enlightened community.

The child's abdomen is not the place for heroic surgery, and, indeed, most of it is of the "chicken-hearted" variety. It consists of the removal of an appendix, the reduction of an intussusception, pyloroplasty, a very occasional gastro-enterostomy, the removal of a Meckel's diverticulum, the division of a peritoneal band, and the radical cure of a hernia. This is the routine work of a children's hospital. It saves a large number of lives at a low rate of mortality. Most of our surgical deaths are due to irreducible intussusceptions, unrecognized hypertrophic stenoses of the pylorus, and neglected cases of appendicitis—that is, to delay in recognizing the true condition. Preventive medicine should pay more attention to the needs of surgery. The American press is in advance of us in this matter. It keeps the American public right concerning teeth, eyes, dandruff, athlete's foot, halitosis, and body odour; more recently it has directed attention to the dangers of the thyroid and the appendix.

Anaesthesia

Avertin is one of the main advances in the past five years. It has abolished the sound of crying; the child knows nothing of the operation; post-operative lung trouble is much diminished; and subsequent vomiting is slight or absent. The drug is not without danger in young infants, and we do not use it for hare-lip, hypertrophic stenoses, or intussusceptions. It is always combined with local anaesthesia, since the dose of avertin used is not sufficient to abolish cutaneous sensibility. Our anaesthetist, Dr. Boyd, who has an experience of over 600 cases of avertin in children, recommends the following dose: 0.175 gram per kilogram of body weight accompanied by 1/150 grain of atropine, and morphine according to age—that is, 2 to 5 years, 1/20 grain; 5 to 9 years, 1/12 grain; and 9 to 13 years, 1/8 grain.

The Appendix

I have no hesitation in saying that appendicectomy is the most important operation in the child's abdomen. It saves more lives and improves the health of more children than any other operation. If it were always done in the quiescent stage the mortality should be *nil*. Nearly all the deaths occur in perforations with general peritonitis, and it is my belief that if the obstructed appendix could be recognized and removed before the onset of acute symptoms a large number of lives would be saved.

There are different schools of thought on the incision, pathology, time of operation, and the limits between the normal and the abnormal. I prefer the gridiron incision, through which any appendix can be removed. It has a great advantage over the paramedian when a retrocolic appendix is being dealt with: it is well away from the small intestine area, and should adhesions form they will tend to be caecal. As regards the time of operation, I remove the acute appendix as soon as it is diagnosed, operate immediately when in doubt, remove the chronic or recurrent appendix as soon as convenient, and in certain cases I am content to drain.

PATHOLOGY OF THE APPENDIX

We must admit, I think, that the last word on appendicular pathology has not yet been written and that there are still many gaps in our knowledge. Krecke,[1] after a very complete and up-to-date account of the causes of appendicitis, summarizes his conclusions as follows:

> "The real cause of appendicitis is not yet clear. One may accept that there is a bowel-borne infection. Mechanical obstruction plays an important role. Neuro-angiospasm may be a factor and may account for those cases attacking several members of a family."

One tends, with the progress of years, to place more appendices in the pathological class, and to recognize that an opinion cannot be given on the macroscopic condition until the appendix has been removed and opened. The histologist would appear to be still more exacting, since he occasionally places in the pathological class appendices which show no naked-eye pathology. The surgeon is in the most favourable position to record the naked-eye pathology because some of this may be obliterated by the appendicectomy. For example, kinks, U-shaped bends, corkscrew or spiral twists, and atypical peritoneal relations may be destroyed by the removal of the appendix. The surgeon himself may find considerable difficulty in visualizing the pre-operative position of the viscera after he has pulled the caecum out of the abdomen, and with a certain arrangement of peritoneum this manœuvre will convert a hairpin bend into a straight appendix. This happens, for instance, where the proximal part of the appendix ascends and is adherent to the posterior aspect of the caecum while the distal part descends and is mobile. The pathologist labours under

* Presidential address to the Northern Ireland Branch of the British Medical Association, delivered at the Whitla Medical Institute, Belfast, November 22nd, 1934.

the disadvantage of seeing the appendix in his laboratory for the first time and of having no opportunity of correlating his findings with the living anatomy or with the results of operation.

Most writers agree that mechanical obstruction plays an important part and that the infection is bowel-borne. Aschoff maintains that the inflammation is due to a microbe which normally dwells in the appendix lumen and requires an increased virulence to enable it to attack the mucous membrane with success. Obstruction, by preventing the free entrance of caecal contents with their peculiar micro-organisms or by preventing the free escape of appendicular secretions, is a potent factor in bringing about this increased virulence.

Surgeons usually have a creed with regard to appendicitis, and my own is as follows: (1) The lumen of an appendix may be obstructed by its peritoneal relations, its vascular connexions, changes in its wall, or by its contents (mass of faeces, intestinal salts, or swallowed material). (2) Such an obstruction renders an appendix more liable to inflammation and accelerates the stages of inflammation. (3) An inflamed appendix may recover or may pass on to the stages of ulceration, empyema, perforation, or gangrene. (4) The exact number of days required for an appendix to pass through this cycle of changes varies, and important factors in control are the existence of previous attacks and the degree of obstruction. (5) Venous congestion, arterial spasm, and thrombosis of vessels may enter into the pathological picture, but their position in the sequence of events is not yet clear. (6) The part played by gas-gangrene bacilli is a matter for further investigation. (7) The normal mucous membrane of the appendix is a pale yellow colour, and alterations in this colour are the earliest naked-eye signs of a pathological condition. These colour changes are often sharply limited to one segment of the tube, and take the form of a red blush, a purple ring, or bluish-red petechiae. They may be accompanied by free blood in the lumen.

THE CHRONIC APPENDIX

The term "chronic appendix" is very widely used, and would appear to apply to all those appendicular conditions which are not disclosing themselves at the moment by acute symptoms. It includes recurrent appendicitis, recurrent mild attacks of appendicitis, the obstructed appendix, and the various mucous membrane changes. The chronic appendix may lie dormant for fifty or sixty years; it may react on the stomach or duodenum, or it may produce attacks of abdominal pain which may be accompanied by vomiting, pyrexia, or tenderness. The recognition of this condition is a diagnostic triumph, since the removal of such an appendix should be attended with no mortality and may prevent a subsequent catastrophe.

The living pathology of the chronic appendix includes obstructions and mucous membrane changes. There may be obstruction of the lumen by a coprolith or by a localized thickening of the wall; or there may be obstruction by any one of the following conditions: the spiral twist, the corkscrew, the angular kink, or the U-shaped bend. These various conditions are produced mainly by peritoneal attachments. The mucous membrane changes have already been described. Often they accompany and lie distal to a kink, but they may be present in the absence of any obstruction. Some of these colour changes fade rapidly and are best seen immediately after removal.

DIAGNOSIS

The classical textbook signs and symptoms may be present in the acute appendix, but if these are insisted upon many serious appendicular lesions will be missed. Rigidity and changes in pulse or temperature may be absent, and one occasionally operates when the only signs are colic, vomiting, and tenderness. If there is a history of a previous attack the case for operation is greatly strengthened. It is, I believe, a mistake to await the appearance of more definite signs or to make repeated examinations in the hope of diagnosing the exact pathological condition. As soon as the appendix is suspected it should be removed. If the surgeon is wrong and finds that he has removed a normal appendix the mortality should be *nil*. If there is any appendicular pathology present then he is justified, but he cannot be sure of the appendix until it has been removed and opened.

In the chronic appendix, as a rule, the history and the examination of the patient can only suggest the probability or possibility of some appendicular pathology. The problem is much simpler in children than in adults. In the former, diseases of the stomach, duodenum, gall-bladder, and female genitals are exceedingly rare. Cancer of the bowel is not likely to complicate the picture, and renal calculus or hydronephrosis must be excluded. The common errors in diagnosis are produced by constipation, mesenteric glands, adhesions, tuberculous peritonitis, cyclic vomiting, and acidosis.

Opaque meal examination is at times a valuable aid by revealing gastric retention or a deformed appendix. One encounters cases of gastric retention which are entirely relieved by removal of a chronic appendix. The appendix may be visualized seven hours after the meal, but it is more frequently seen at the end of thirty-one hours. Complete absence of any appendicular shadow may mean obstruction at the base or blotting out by the colon shadow. Mere breaks in shadow continuity are of no importance. Persistence of the appendix shadow after the caecum has been emptied, according to some observers, indicates disease or deformity. Tenderness over the appendix shadow falls into a similar category.

OPERATION

In the presence of pus how far should one go in the attempt to remove the appendix; and is there any danger in leaving the appendix or part of the appendix in the abdomen? It is impossible to lay down any rules on this subject. The condition of the patient, the accessibility of the appendix, the presence of an adhesion barrier, the mobility of the caecum, and the state of the caecal wall are all factors to be considered. It is quite certain that the gangrenous portion of an appendix can be entirely destroyed or absorbed by the omentum, and probably the retrocolic tissues can perform a similar function. If, therefore, the proximal portion can be removed and a good stump infold secured the sloughed tip will probably disappear. Inefficient closure of the stump occasionally leads to slight faecal leakage, but in my experience this is only temporary. With good light, free exposure, and gentle mopping away of the pus it should be a very unusual occurrence not to see the base of the appendix.

If one fails to remove the appendix no second operation should be undertaken unless symptoms develop. The probability is that a large part of the appendix will be absorbed and that the proximal part will remain as an unobstructed abbreviated appendix with a new tip. Occasionally faecal concretions may be found lying free in the peritoneal cavity, either seen or palpated; they should, of course, be removed.

The most important thing to avoid is the tearing of the caecal wall. Occasionally the inflammation spreads on to the wall, and rough handling of this friable structure may lead to a caecal fistula. In such a case it may be advisable to remove the appendix in the abdomen or to cease to search for it.

OPERATION RESULTS

In the past six years I have had 140 cases of acute appendicitis in the Children's Hospital with eight deaths, a mortality of 5.5 per cent. One patient died of lung trouble thirteen days after operation, and the remaining five died on the day following operation. In all five the peritoneal cavity was very seriously affected ; in two of them the operation was merely one of drainage. Here are the short pathology notes of the five.

Case 1.—History of two days. Much thin purulent fluid in peritoneal cavity ; appendix inflamed and perforated at tip.

Case 2.—No history. Thick pus ; intestines matted. Long gangrenous appendix removed.

Case 3.—History of appendix trouble for eight days. Large right ilio-lumbar abscess ; small bowel distended ; drainage only.

Case 4.—History of appendix trouble for seven days. Free pus in peritoneal cavity ; drainage ; appendix not sought.

Case 5.—Child, aged 2 years, with history of appendix trouble for six days. Pus in region of appendix ; blood in peritoneal cavity ; ileum distended and blue ; appendix crossed the ileum, which it may have restricted ; appendix perforated at its mid-point. Appendicectomy and drainage.

During the same period eighty-seven cases of chronic appendix have been operated on with no deaths. A follow-up has been attempted in many of these, but owing to the roving population for which our hospital caters it has been impossible to obtain complete returns. Six months should elapse before the inquiry is made, but by this time the family may have migrated.

Out of fifty-eight cases of so-called chronic appendix which have been investigated thirty-nine patients have been relieved of their symptoms, ten have not been relieved, and nine gave no reply.

Of the ten unrelieved patients, one was subsequently found to have a stone in the kidney, three had a normal appendix, two were much improved, and the other four still have their colic. The symptoms of the chronic appendix were: attacks of abdominal pain, sometimes right-sided ; abdominal pain and vomiting ; typical recurrent attacks of appendicitis.

Out of sixty-six of these chronic cases with pathological notes fifty-nine showed living pathology and seven showed nothing abnormal. The pathological conditions were mucous membrane changes, stricture, and various forms of kinks.

CASE REPORTS

Case 1.—A boy, aged 14, had had a gland removed from the neck several years ago. His only sister had died some years previously after an operation for alleged appendicitis. Her appendix was found to be normal, but there was some mesenteric adenitis. In August, 1933, my patient was in bed for two days with abdominal colic and sickness, and in the following November he had a similar attack. Boils appeared on the neck and on the left ear. At Christmas of that year and in April, 1934, there was bilateral deafness. The left drum was incised in May ; the tympanic membrane was like oil-silk and there was free sterile fluid in the middle ear. The following month the right drum was incised, and the right middle ear was found to be in a similar condition. On September 23rd there was abdominal pain and vomiting, which continued until I saw the patient the next day.

Examination revealed absolute flaccidity of the abdominal wall and some suprapubic tenderness. The pulse was 92, and the temperature 99.5° F. I advised operation, but every effort was made to divert me from this. The boy's own history and that of his sister were related. At operation, two hours later, the appendix was found rigid and distended with pus ; there was a caeco-appendicular kink. Convalescence was normal, but most interesting in the subsequent history was the marked improvement in the ears.

Three points emerge from this case: (1) there may be serious appendicular trouble without any rigidity ; (2) history may lead one astray ; and (3) chronic middle-ear disease may be connected with the appendix.

Case 2.—Five years ago a girl, aged 9 years and 6 months, was admitted to the Belfast Hospital for Sick Children with alleged appendicitis. She was discharged without operation, and for five years was treated for a tuberculous abdomen. A month ago she had an attack of pain in the right side with vomiting ; subsequently she had several similar attacks. When she was admitted to hospital on November 21st, 1934, her pulse and temperature were normal ; there was no rigidity, but a slight tenderness in the right iliac fossa.

At operation the appendix showed a moderate kink at the junction of the distal and middle thirds. This kink was due to a short band of meso-appendix which anchored the appendix to the adjacent caecum and posterior abdominal wall. On pulling on the distal third it became blue in colour as if it were being strangulated. Internally the mucous membrane of the distal third was dark red and overlaid by some blood. There was a narrow coprolith in the region of the kink. There was no sign of tuberculous disease.

This was a typical chronic appendix. Such cases should always be investigated by operation.

Congenital Hypertrophic Stenosis of the Pylorus

The diagnosis and treatment of this condition has improved enormously during the past twenty years. I have no recollection of ever seeing it during my first ten years at the Children's Hospital ; during the next ten years I saw about one case per annum, and now I am operating on one case per month. The condition is not, I think, increasing in incidence, but is being more frequently recognized.

The main diagnostic feature is visible gastric peristalsis ; there is also projectile vomiting, and loss of or failure to gain weight. The following figures are quoted from a recent communication: average age of onset of projectile vomiting, 3 weeks ; average age at time of operation, 5½ weeks ; average weight at operation, 7 lb ; range of onset, birth to eleven weeks. The presence of a palpable tumour depends much on the imagination and touch of the examiner, and is not really an essential test in the presence of visible gastric peristalsis, which is best seen immediately after a feed.

Pre-operative treatment consists of lavage and glucose saline per rectum.

OPERATION AND ITS MORTALITY

The child is fixed on a padded cross, and a high right paramedian incision is made under gas and oxygen with local anaesthesia. The stomach is withdrawn with forceps, and the pylorus is fixed in position by an assistant. Any large pyloric vessel which might interfere with the incision is underrun with a needle and ligatured. A longitudinal incision is made over the tumour at the junction of the upper and middle thirds anterior pyloric wall ; this incision divides only the peritoneum and superficial muscle fibres. The edges of the incision are retracted by small lung forceps, and the deeper muscle fibres, which are now on the stretch, are divided by blunt dissection and the mucous membrane exposed. The mucous coat appears as a white or yellowish-white layer, and should be exposed in the whole length of the pyloric canal. Great care must be taken not to perforate this mucous membrane coat, and the danger zone is near the duodenum. The stomach is then returned to the abdomen and the abdominal wall closed.

After operation saline is administered per rectum, four-hourly, and feeds are given by the mouth as soon as the child can swallow. Many of the cases show a sharp post-operative pyrexia: 102°, 103°, and 104° are not uncommon readings on the day after operation.

The mortality of the operation varies much in different clinics. At one time the British mortality was around

50 per cent., but a recent communication reports 25 per cent. Wallace and Wevill report only 4 per cent. of deaths in 145 cases. My own figures are twenty-four cases with five deaths, a mortality of 20.8 per cent. Statistics are not very reliable, since uniformly good results may be secured by avoiding the bad cases, and bad returns will be obtained by operating on all and sundry. In my own series I have never refused to operate on any case sent forward by the physician.

A common diagnostic error is to confuse this condition with congenital atresia of the duodenum. As a rule the error is only discovered at operation, but in congenital atresia there will be no tumour, and jaundice may be present if the atresia is distal to the common-duct opening.

Duodenal Ulcer

Duodenal ulcer is by no means uncommon in children, and four distinct groups can be recognized according to age: *Group 1.*—Ulcer of the newly born, which makes its presence known by melaena neonatorum. *Group 2.*—Ulcers in children from a few weeks to 1 year old; these are acute and probably of an infectious nature. *Group 3.*—Ulcers in children from 1 to 9 years; these are chronic, and fail to give rise to any suggestive symptoms. *Group 4.*—Ulcers in children from 9 onwards; these give symptoms similar to adult duodenal ulcer, and may be treated similarly.

I met a case from Group 4 in February, 1934. A child, aged 10, gave a six-months history of stomach pain which was present in the morning, and was relieved by a hot drink. *X*-ray examination showed a well-marked seven-hour gastric retention and no visualization of the first part of the duodenum. At operation a large visible and palpable duodenal ulcer was found. The appendix was normal externally, but the mucous membrane of the tip was bluish-red. The appendix was removed and a gastro-enterostomy performed. Since operation the child has been free from symptoms.

Intestinal Obstruction

Strangulated hernia, ileus following appendicitis, a band, a kink, Meckel's diverticulum, congenital defects, and tuberculous peritonitis are the common causes of intestinal obstruction. The following are brief notes of two recent cases.

CASE 1

A boy was admitted to hospital with a five-days history of appendix trouble and signs of an acute appendix. The appendix, which was removed on the day of admission, lay postero-lateral to the ascending colon; it was surrounded by omentum, was swollen and inflamed, contained pus and two coproliths, and showed gangrenous mucous membrane in its distal half. After operation nothing was passed by the bowel, and enemata returned unchanged. The abdomen became distended and ladder-like. There was vomiting, which subsequently was faecal. Medical measures were without avail, but gastric lavage gave temporary relief.

Nine days after operation death was imminent, and as a last resource a right rectus incision was made under novocain. A presenting loop of distended bowel was sutured to the parietal peritoneum and the bowel opened. The following day the boy was sitting up and playing with his toys. All vomiting ceased and the distension disappeared. Seven days after the ileostomy enemata showed a result, and twenty-four days later semproline produced a natural motion. The boy left hospital, and is now attending the out-patient department. The appendix incision is soundly healed, but there is a slight purulent discharge from the ileostomy wound.

CASE 2

A girl was admitted to hospital on April 30th, 1933, with a history of vague abdominal pain for one year. Recently the attacks had been more severe and had been accompanied by vomiting. On admission the abdomen was distended and showed the ladder-like appearance of obstructed small bowel. The temperature was 100° and the pulse 140. In a few days with enemata the distension subsided, and the patient appeared normal on May 10th. Opaque meal and opaque enema examination disclosed transposition of viscera but no sign of obstruction. She was discharged on May 16th.

She remained well until September 9th, when abdominal pain returned and her doctor diagnosed appendicitis. She was readmitted on September 11th with a temperature of 102°. Treatment with enemata was repeated, but after one week the abdomen was opened. There were enlarged mesenteric glands and the ileum was found to be constricted by a band the thickness of the little finger. The band was divided and the patient was discharged well on September 30th. Six days later she was readmitted with abdominal pain, vomiting, and distension. Olive oil enemata were given, and she was well in four days. She was detained in hospital for three weeks' observation, but since then has remained well.

Meckel's Diverticulum

One out of every fifty people has a Meckel's diverticulum, but, of course, only a small proportion of these ever give rise to any symptoms. I can recollect only three such diverticula in the last twenty-five years. Two of them opened at the umbilicus and were seen in infancy; one was inflamed and simulated appendicitis. In the two former cases there was a red polyp-like structure at the umbilicus on the surface of which was an aperture leading into the abdomen. At operation in one of these the diverticulum was found to be connected with the appendix joining the antimesenteric border about the mid-point. The specimen now reposes in the Hunterian Museum in London, and is the only one of its kind. There was the usual attachment to the ileum in the second case. Operative procedure consisted in circumcising the navel and suturing the skin over the fistula. Gloves, instruments, and towels were then changed and the abdomen was opened. In the one case the appendix was removed with its attached diverticulum, whilst in the other the diverticulum was clamped at its base, removed, and the ileal opening closed, transversely to the long axis of the bowel, by two rows of suturing. A blind diverticulum fixed to the umbilicus is very prone to give rise to intestinal obstruction, and must always be considered as a possible aetiological factor.

Intussusception

I have had nineteen cases of intussusception during the past six years, with two deaths. The deaths were in irreducible cases in which resection was necessary. The diagnosis is always somewhat worrying. An enteritis may produce blood in the stools, but in enteritis the blood is mixed with bowel contents. Purpura is another condition with which it may be confused. A palpable tumour makes the diagnosis easy, but it is often wise to operate in the absence of any palpable tumour. I like the high gridiron incision, since it is very easily closed and there is not the same tendency for the small bowel to escape as with the paramedian.

Two points in the pathology which have impressed me are: (1) that the starting-point in a very large number of cases is a lateral dimple in the ileum, which point is possibly a swollen mass of lymphoid tissue; (2) that most intussusceptions are found in children who have a mobile ascending colon.

Operation within the first twenty-four hours will almost always give a good result, but even after five days it may be possible to effect a reduction. In doubtful cases an opaque enema may determine the diagnosis. I have never seen an intussusception recur, so that I do not think it is necessary to take any steps to prevent recurrence.

REFERENCE

[1] Knocke: *Münch. med. Woch.*, February 24th, 1933.

A CLASSICAL CASE OF LEAD PALSY

BY

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Thirty to forty years ago lead neuritis in house painters was not uncommonly met with in hospital practice among the out-patients, but for a considerable number of years past it has been of increasing rarity, and is now scarcely ever seen. Its frequency among the painters was ascribed to uncleanly habits of eating their food without having previously been careful to cleanse their hands properly of paint. I was always somewhat sceptical of this explanation, which every medical student was familiar with, just as he was always ready to inform the examiner that a common instance of lead poisoning was the bus or cab washer, or other early riser, who obtained cheaply the first draught of beer drawn at "the public," after it had been standing all night in the lead pipe which led from the cask to the beer engine.

I much doubt whether the personal hygiene of the house painter is so much improved in this century as to account for the disappearance of lead neuritis among them. Almost certainly the real reason is that nowadays the various paints required are machine-mixed in the factory, ready for the painter, who formerly used to mix his paints himself.

Before developing lead neuritis he usually suffered once or twice from attacks of lead colic, and the well-known blackish-blue lead line could be demonstrated on the gums around the remaining teeth, usually extremely dirty, and entirely innocent of a tooth-brush's acquaintance.

In early cases the extensors of the fingers were demonstrably weak, and the right, or working, arm was usually the more severely involved. I remember well one such patient who developed total bilateral wrist-drop within three days of being given a mixture containing 5 grains of potassium iodide. The point has been much debated whether the administration of iodide internally influences the excretion of lead deposited in the tissues, but there is a good deal of evidence to indicate that it does so, and even that the lead thus brought into the general circulation may increase the existing toxic symptoms of lead poisoning to a serious extent. Certain peculiarities of muscle selection are usually noticeable in the less severe cases. The legs almost always escape entirely, and the knee-jerks are unaltered. In the forearms the supinator longus generally escapes, as does also the extensor ossis metacarpi pollicis. In the so-called upper-arm type there is additional weakness of the deltoids, and to a less extent of the flexors of the forearm. The flexors of the fingers and wrist are never affected, but occasionally there is seen an additional paralysis and atrophy of the intrinsic hand muscles, the thenar eminence being flattened and the interossei wasted. This atrophy of the hand muscles is permanent, and is due to a subacute poliomyelitis, though the dropped wrists and deltoid paralysis, being a neuritis, recover in course of time.

Clinical History

The following case was sent to me a month ago with the diagnosis of scapulo-humeral myopathy, which was made in a Northern hospital in which he had been resident for ten weeks.

A man, aged 51, living in the country in Lancashire, had been losing weight for eighteen months, which was ascribed to financial worry. In May, 1934, he caught a chill through getting wet, and shivered a good deal, this being followed by pains in both shoulders, more particularly in the left. The pains continued for some weeks, and the arms began steadily to get weak from this time onwards, so that he was unable to raise them at the shoulders. In August his arms became very shaky on effort, and early in September he developed bilateral wrist-drop. The pains by this time had ceased, but the arms had been steadily getting weaker ever since May. In the middle of September he went into one of the large city hospitals in the North, where he remained for ten weeks, and the diagnosis of scapulo-humeral myopathy was made. He returned to his home early in December, and the next day was sent up to see me in London. He told me that towards the end of his stay in hospital he thought his arms were slightly stronger than when he was admitted. He had no complaint of his legs or trunk, his walking was perfectly good, there was no weakness of any of the muscles in the lower limbs, and the knee-jerks and Achilles jerks were brisk. On stripping him to the waist and asking him to raise his arms, there was evidently symmetrical paralysis of both deltoids, as he could not abduct either arm at all from his side. Flexion of both forearms was very weak, but he was able to do so against slight resistance; the biceps muscle was somewhat wasted, and the supinator longus was also very weak. There was complete bilateral wrist- and finger-drop, and no power of extension of the thumb or of any fingers. Flexion of the fingers and of the wrists was normal, and the intrinsic muscles of both hands were quite normal. There was no sensory loss whatever, and there was no muscular tenderness to be found. Examination of his gums for lead line was negative, as he was completely edentulous and wore dentures.

The picture, therefore, was one of symmetrical wrist-drop and shoulder-drop; the triceps muscles, the latissimus dorsi, the pectorals, serratus magnus, the trapezii, and all other muscles were quite normal. Clearly the condition was not a spinal muscular atrophy, and it was much too rapid to be a muscular dystrophy, whereas the picture of double wrist-drop and double deltoid paralysis very strongly suggested lead palsy—so strongly indeed that I was quite certain of the diagnosis, simply by looking at the man.

Source of the Lead Poisoning

On asking him what his work was, he said that he was a traveller in asbestos. This seemed a sufficiently harmless occupation, and in no way suggestive of contamination by lead. The next question was: "What is your water supply?" He replied: "Oh, that is very good. It is a private supply belonging to Sir X. Y., who allowed me three years ago to lay a pipe to my house from his supply. The water itself comes from springs up in the hills to the north." "What length of piping was laid down to your house, and is the piping made of iron or of lead?" "Oh, it is a lead pipe, about ninety yards long." "Do you drink much water yourself?" "Yes. I drink probably more than anybody in the house. I have two tumblers when I go to bed at night and two tumblers again first thing in the morning." "Where do you get your morning drink from?" "The kitchen tap." "Are you the first to go to this supply in the morning?" "Yes."

The source of the lead poisoning was now fairly obvious. A peaty water, and acids dissolving the lead in the pipe-line supplying the house both for drinking and for cooking, and his first drink in the morning was the water which had been lying all night in the leaden pipe. I told him to cut off this supply at once, and that it was not to be used any more for cooking or for drinking, but might be used for washing, and I told him to send me a quart bottle of the water that was drawn first thing in the morning from the kitchen tap. This I sent to a public analyst, Mr. Rowland, who reports 0.7 per 100,000 of lead in the water, which, as he remarks, is a dangerous percentage.

As regards treatment, I thought it wiser not to prescribe any iodide mixture, but to allow the neuritis gradually to get better with treatment by massage and galvanism, and the use of light splints to keep up moderate extension of his fingers and wrists. Aeroplane splints for maintaining abduction of the shoulders in order to avoid chronic overstretching of the deltoids are too cumbrous and impracticable, and I thought it best to leave them alone, except for massage, passive movements, and electricity.

It is worthy of note that this patient on no occasion had complained of colic, though severe lead neuritis had been present for several months.

A Case for Comparison

A case I saw twenty-three years ago may be recalled in comparison with the origin of this case. The man had about a year before taken a house with large grounds, and as the water supply was from an indifferent well, he had his house connected with a main water supply by a pipe laid for a distance of a quarter of a mile up the drive to his house. This had been contracted for to be laid in iron pipes. After living there for several months he began to suffer from chronic indigestion, which was diagnosed as being due to duodenal ulcer. Medical treatment did not improve this, and as he was getting worse a surgeon from Manchester decided that an operation was necessary for the duodenal ulcer, and this was arranged to be done on a certain day, and the operation would have been performed had not his butler on the day previous to that arranged for the operation developed bilateral wrist-drop. Although the butler had not suffered from colic, the wrist-drop was recognized as being due to lead neuritis, and this led to a revision of the diagnosis of duodenal ulcer in his master, and the operation was postponed. Investigation of the water supply proved that the piping which had been laid down consisted of lead piping and not of iron pipes, as had been contracted for. My patient was removed to a nursing home in another district, and he soon lost his abdominal pain, which was clearly due to lead colic and not to duodenal ulcer. He was therefore saved from operation by the illness of his butler, whose dropped wrists due to lead poisoning were incidentally an excellent testimonial to his character as a water drinker.

E. Gundersen, in a supplement to *Norsk Mag. f. Laegevid.* for December, 1934, records an epidemiological study of mumps during a hundred years in Norway (1834–1934). The disease never wholly died out, and it swept over large areas of the country in great epidemic waves, which recurred at remarkably regular intervals of eight to ten years. Of late there has been a tendency for these intervals to be shorter. They almost invariably began in the autumn, and reached their peak in January and February. From then onwards there would be a decline till the epidemic ebbed out in mid-summer. The ages of the patients were from 4 or 5 to over 30 years, and as long ago as 1852 it was remarked that children under 4 years were immune. Among the notified cases (and they constituted a minority) there was one death for every 2,900 notifications—a total of fifty-three deaths since 1867. They were due to such complications as suppuration of the parotid with septicaemia, brain disease, oedema of the larynx, and nephritis. Considerable variation was observed in the character of the different epidemics, some being very mild, and the patients being for the most part children. Other epidemics would show a preference for adults, who reacted with high fever and were prone to develop metastases. In some epidemics the skin would be often involved, in others the nervous system, the mucous membranes, the digestive or the urino-genital tract. Epidemic parotitis must therefore be considered as remarkably polymorphous in its extraparotid manifestations.

ACHRESTHIC ANAEMIA *

BY

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Summary of Cases

Symptoms referable to the anaemia, such as dyspnoea, palpitation, and undue fatigue were severe in five cases, less prominent in two of them; pyrexia was not a feature. Digestive disorders were usually absent and the bowels were unaffected (except for occasional diarrhoea in Case I). Glossitis was absent. Icterus was present in some degree, but was not severe. Two patients lost weight. Involvement of the central nervous system was not found in any of the cases. Only one patient (Case II) had retinal haemorrhages. The liver was somewhat enlarged in two cases and the spleen was palpable in one. The teeth and upper digestive tract showed no peculiar involvement. The circulatory system presented no unusual features of importance.

The Wassermann reaction was negative in all cases, while the van den Bergh was negative in three, "indirect positive" in two, and gave a direct delayed response in one. Fractional gastric analysis established the presence of free hydrochloric acid in all cases, the quantities varying from hypochlorhydria to hyperchlorhydria, but large amounts of acid were secreted under the influence of histamine.

There was a megalocytic anaemia in every case; the mean diameter of the red cells varied from 7.78 to 8.43 microns, megalocytosis from 12.6 to 46.7 per cent., and the coefficient of variability from 9 to 17.7 per cent. The anaemia when first seen was severe (that is, less than two million red cells) in four cases; there were between two and three million red cells in the other three cases. All the patients except one (Case V) showed severe anaemia at some time. Nucleated red cells—between 4 and 16 cells per 400 leucocytes—were present in five cases. Anisocytosis and poikilocytosis were observed in all cases and varied according to the severity of the anaemia. Polychromasia was usually seen and occasionally punctate basophilia. Reticulocytes, except after intensive parenteral liver therapy, were low, varying from 0.3 to 8 per cent.; Case II showed a maximum of 14 per cent. when the anaemia was severe. The fragility of the red cells was normal in all cases where it was examined.

RESPONSE TO ANTI-PERNICIOUS-ANAEMIA THERAPY

Parenteral liver treatment was given in six cases, but there was no satisfactory response in four of these. Case I in the early stages of the condition responded to large doses of liver with reticulocyte peaks; but later this treatment had no effect. In Case III there was a small rise in reticulocytes (maximum 12.5 per cent.) after intensive treatment, but there was no subsequent response or rise in the red cell count.

Desiccated stomach was given in all cases, and a moderate blood level was maintained for a time at least. Severe relapses, in spite of treatment, occurred in four

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cases ; the others remain more or less stationary. Marmite was given to five patients without producing any significant change. Repeated blood transfusions were required in five cases, and four patients were thereby tided over critical periods.

Definition of Achresthic Anaemia

The condition can be defined as a rare but severe hyperchromic, megalocytic anaemia due to lack of utilization, or mobilization from the storage depots in the body, of the anti- (pernicious) anaemia principle as found in liver. It is characterized also by a normal or almost normal gastric acidity, no disturbances of the gastro-intestinal tract or central nervous system, no pyrexia or evidence of haemolysis, and a lack of, or poor response to, anti-anaemic treatment.

Apparently the sexes are about equally affected. The age of onset is much more variable than in pernicious anaemia ; the disease may occur between early adult life and old age, whereas the majority of cases of pernicious anaemia are first diagnosed over the age of 40.

Course and Prognosis

The course of achresthic anaemia is chronic with an insidious onset. It seems ultimately to prove fatal, although life appears to be prolonged at least for a time by intensive anti-anaemic treatment and repeated blood transfusions. Prognosis, therefore, must be guarded.

Case I shows that although the patient was rescued from serious relapses by successful transfusions, the end-result was fatal. How far this will apply to the other patients remains to be seen. Those in Cases II, V, and VII maintain a fair condition at the time of writing, while those in Cases III, IV, and VI are in a precarious condition. On the whole it seems likely that the course of these cases may be prolonged, but capacity for work is seriously impaired. A constant watch must be kept for the onset of relapses ; blood counts, therefore, should be taken at least every fortnight.

Differential Diagnosis

The association of megalocytic or pernicious anaemia with a large number of different conditions[15 16] has already been mentioned, and there should be no difficulty in excluding these. However, the following require further consideration.

PERNICIOUS ANAEMIA

This is readily distinguished from achresthic anaemia by: (1) the presence of free hydrochloric acid in the gastric secretion ; and (2) the failure of, or poor response to, specific anti-anaemic treatment with an active parenteral liver preparation ; the characteristic spontaneous remissions of pernicious anaemia are not seen.

ACHOLURIC JAUNDICE

The familial form with enlarged spleen, increased fragility of red blood cells, jaundice, and, in some cases, persistent reticulocytosis, presents no difficulties. The acquired type as described is a vague condition in which anaemia, splenomegaly, and icterus of fairly sudden onset occur in adults ; increased erythrocyte fragility may not be prominent. Dawson[3] doubts the existence of this type, and Vaughan[9] regards all cases as being due to an inborn abnormality of the erythrocytes, which may, at any time during life, either chronically or acutely, lead to the syndrome of acholuric jaundice. She points out that extensive investigation is required before a case can be regarded as non-familial. This description certainly fits the facts better than the conception of a separate acquired type. Witts[19] has stated that blood transfusion in such cases is often followed by a severe haemolytic crisis ; this differentiates them from cases of achresthic anaemia, but clearly the diagnosis must be made before the transfusion is given. Consequently, even slight increases of red cell fragility together with other signs should engender caution when giving transfusions.

ACUTE HAEMOLYTIC ANAEMIA OF LEDERER

This is easily differentiated by signs of acute haemolysis, persistent high reticulocytosis, pyrexia, occasional purpuric eruptions, and leucocytosis with large numbers of immature white cells and nucleated red cells.

HODGKIN'S DISEASE

Hurst,[6] Davidson,[2] Goodhart,[4] and Weber and Schwarz[18] have described cases of megalocytic anaemia which have proved to be due to Hodgkin's disease. In the absence of enlarged glands, which might provide a diagnosis by biopsy, or other evidence of enlarged glandular masses, Hodgkin's disease cannot certainly be held responsible.

APLASTIC ANAEMIA

The clinical features at the onset of aplastic anaemia may closely resemble achresthic anaemia, but there is very little evidence of blood regeneration—that is, reticulocytosis and nucleated red cells are usually absent. The course of aplastic anaemia is more rapid and it goes steadily downhill. There is, of course, complete aplasia of the haemopoietic tissues at necropsy.

"HAEMOLYTIC" ANAEMIA OF PREGNANCY

This condition is always associated with pregnancy or the puerperium, and it responds to adequate doses of the anti-anaemic liver principle with complete recovery. Treatment may be discontinued when the blood is normal, and further relapses are not seen as a rule. There is usually a normal gastric acidity.[13]

LIVER DISEASE

The occurrence of megalocytic anaemia associated with disorders of the liver has received attention from several writers, notably Wintrobe and Shumacker.[18] Disease of the liver must be excluded when considering a diagnosis of achresthic anaemia, but in practice little difficulty arises. In the cases reported by Wintrobe and Shumacker the patients were clearly ill of liver disease, and the anaemia was "slight or moderate when compared with the gravity of the patient's illness." In the two cases of achresthic anaemia with enlarged livers in the present series, the anaemia was the prominent condition, and there were no clinical signs or symptoms of liver disease.

Again, spontaneous remissions were a feature of the liver disorder cases, and they often "took place in face of clinical aggravation." This is not seen in achresthic anaemia. Fractional gastric analysis has shown both achlorhydria and free acid. Wintrobe and Shumacker obtained a response to liver therapy in only one out of four cases. Neither of these points is helpful in diagnosis.

CARCINOMA OF GASTRO-INTESTINAL TRACT

Malignancy of stomach and colon should always be looked for clinically, and will be found radiologically if the blood has reached the stage of megalocytosis. Gastric analysis may yield evidence of carcinoma even though hydrochloric acid may be present. The characteristic reticulocyte response usually follows parenteral liver therapy (Wilkinson[15 16]).

Treatment

It will be appreciated from what has already been said that treatment is not very satisfactory. Parenteral liver therapy should be given a trial in the first place, since it may also furnish important diagnostic information from the responses obtained. Much larger doses than are usually given in pernicious anaemia will be found to be necessary ; as much as 6 to 8 c.cm. of liver extracts intramuscularly daily should be given for from seven to fourteen days—preferably divided into several doses throughout the day. If no reticulocytosis occurs, or if there is but a moderate response with a poor improvement in the red cell count, then blood transfusions must be considered. These must be repeated until a reasonable red blood cell count is reached. No untoward reactions have occurred in the cases described in this series. Maintenance treatment must be vigorous always, and should consist of regular injections of parenteral liver extracts (4 to 8 c.cm. weekly, or even more frequently) with desiccated stomach (such as pepsac or gastrexe) in doses of 1 oz. daily, while marmite may also be given. When the relapses occur blood transfusions must be repeated as often as is necessary. Splenectomy is not indicated, and, indeed, would not appear to be advisable.

Aetiology

It is known that a megalocytic anaemia of the Addisonian type may follow interference at different stages with the normal elaboration and storage of the anti-anaemic factor. Thus, absence of haemopoietin (the intrinsic factor) or of certain food elements (the extrinsic factor), or the prevention of their interaction in the stomach (as may occur after gastro-enterostomy), means the non-production of the so-called anti-anaemic liver principle (or a precursor of it) and the development of pernicious anaemia. Lack of absorption of this formed principle from the alimentary tract will, of course, allow of the production of a similar anaemia.

Even assuming a normal absorption and storage of this anti-anaemic principle it is possible that in certain circumstances it may remain unavailable for haemopoiesis. This possibility arises in the case of achresthic anaemia, and it is therefore important to decide whether this anaemia is really due to some such disturbance of erythrocyte maturation and not to excessive blood destruction.

It may be stated at the outset that such possible causes of anaemia as exposure to haemolytic poisons, and the presence of known toxaemias or of other diseases, have been excluded, and that with present knowledge the anaemia appears essentially to be primary in character. Witts[20] has pointed out that no really reliable criteria exist for making this decision at present. Nevertheless, careful consideration of all the facts does give an indication as to the more probable alternative. Taking first the question of excessive blood destruction, it will have been noted that some of the cases in the present series showed some hyperbilirubinaemia, while the morbid anatomy of Case I indicated a marked haemosiderosis, although no excess of urobilin was observed in the urine. Such criteria have been accepted as indicative of destruction of red cells.

But, as Janet Vaughan[9] has emphasized, it was on these criteria that Addisonian pernicious anaemia was adjudged to be of haemolytic origin, whereas this disease is now known to be due mainly to deficient erythrocyte maturation. In his Goulstonian Lecture Witts[20] discussed this seeming contradiction. He pointed out that although these signs undoubtedly accompanied the sudden destruction of a large number of red cells, it was "a serious error to argue in the reverse direction and to conclude that hyperbilirubinaemia and haemosiderosis are always the result of blood destruction." In pernicious anaemia these conditions occur "not because blood breakdown is accelerated, but because the bone marrow is unable to use these metabolites in the manufacture of fresh red cells." These findings, therefore, are of little assistance.

Evidence as to the rate of delivery of the red cells is, however, more useful. It will be recalled that when the bone marrow is hyperplastic, nucleated red cells may enter the circulating blood, but it is only when an increased reticulocytosis occurs in addition that increased blood formation can be deduced. The cases reported here, except as a result of intensive liver therapy, showed no striking reticulocytosis. It may therefore be concluded that accelerated delivery of red cells, such as would be expected if constant blood destruction were taking place, and especially in view of the marrow hyperplasia, was not present to any marked degree. The balance of evidence, therefore, is against blood destruction as the primary cause of the anaemia under discussion.

In examining the second alternative—defective erythrocyte maturation—the following points must be considered: (1) there is apparently no disturbance of gastric function in these cases of achresthic anaemia ; (2) there is positive evidence (from Case I) that the anti-anaemic principle had reached the liver and was present in quantities more than adequate to produce a reticulocyte crisis in a patient with true Addisonian pernicious anaemia ; (3) there was a megaloblastic hyperplasia of the bone marrow, and there was indirect evidence of hyperplasia in the presence of nucleated red cells.

Now if we accept the view that the maturation of the megaloblast is brought about by means of a principle which, elaborated in the stomach and stored in the liver and elsewhere, is carried in the circulation to the haemopoietic tissues, it may be inferred that, since the anti-anaemic principle is present in the body, and futile megaloblastic hyperplasia has yet occurred, there has been some interference with the proper interaction between the megaloblast and the anti-anaemic principle. It is tentatively suggested, therefore, that in achresthic anaemia the haemopoietic tissues are unable properly to utilize the anti-pernicious-anaemia principle that is present in the storage depots of the body. Whether this occurs as the result of a failure to mobilize the anti-anaemic factor from the tissues in which it is stored, or whether it is due to the deficiency of still another factor at present undiscovered, or whether the utilization of the anti-anaemic principle is prevented by the presence of some inhibiting agent, remains to be determined.

The achresthic anaemia described here is of a megalocytic type. This suggests that an achresthic anaemia of microcytic type may occur, but for the present it is proposed to limit the term to the group of megalocytic cases described in this paper.

Previous Cases Reported in Literature

Cases presenting the unusual features described have been reported from time to time in the literature. Retrospective diagnosis is at all times hazardous, and here it is made more difficult because many of the earlier cases of anomalous anaemias were inadequately reported.

Holmes[5] in 1929 described three cases of failure to respond to liver therapy. The patients in the second and third cases died, and at the post-mortem examination megaloblastic bone marrow was found in the femur. No details were given of the state of the gastric secretion, and, of course, no parenteral liver was available. It is difficult to be sure of the nature of these cases. Kennedy[7] described fully a case of hyperchromic anaemia with free hydrochloric acid in the gastric juice which failed to respond to liver by mouth or to desiccated stomach treatment. The patient showed a remission, which Kennedy thought was spontaneous and not due to the multiple

vitamin therapy that was tried. This remission was followed by a decline, which ended in death. Marked hyperplasia of the bone marrow was found. This description corresponds very well with the cases in our series, and in spite of the fact that parenteral liver was not used the case might very probably have been one of achresthic anaemia.

Of the cases described by Davidson[2] two (Nos. 5 and 8) might have been of the type under discussion. Both had a megalocytic anaemia with free hydrochloric acid in the gastric juice ; both showed resistance to anti-anaemic therapy ; and both showed remission and relapse. Post-mortem details were not available. De Crespigny,[1] in reporting some cases of rare anaemias, describes one as "anaemia of aplastic type" which presents features similar to the cases of this series. There was a severe megalocytic anaemia with free hydrochloric acid in the gastric juice, and reticulocytes varying from 9.5 to 17 per cent. It is not really clear that the case was resistant to liver, and no post-mortem details are given.

Thompson, Richter, and Edsall,[8] in a valuable paper calling attention to the miscellaneous conditions that have been labelled aplastic anaemia, describe a series of cases among which one (No. 2) showed a severe anaemia that refused to yield to all forms of anti-anaemic treatment. At the post-mortem examination hyperplasia of the marrow was found. Details available, however, are not sufficient to make sure of the diagnosis.

Of these seven reports from the literature only the case described by Kennedy presents any really adequate evidence for a retrospective diagnosis of achresthic anaemia ; the others are suggestive in varying degree.

We wish to acknowledge the assistance that has been received from the Medical Research Council and, in part, the Lady Tata Memorial Trust.

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J. S. Anderson (*Arch. Dis. Child.*, December, 1934) illustrates the mild character of scarlet fever at the present time by the fact that of 1,743 cases admitted to the Leeds City Hospital in 1933 only one showed the malignant type, while twenty-three were examples of the septic type. The relapse rates for this hospital during the years 1931, 1932, and 1933 were 3.6, 4, and 4.3 per cent. respectively. Anderson attributes this relatively high relapse rate to the present benign type of scarlet fever providing insufficient stimulus for the development of immunity. Since October, 1933, he has Dick-tested every patient who is not given scarlatinal antitoxin on admission, and in the case of positive reaction gives a course of graduated skin doses of toxin (500, 2,000, 5,000, and 20,000 skin doses at four-day intervals). The injections were well tolerated, and did not have the slightest adverse effect upon the disease. The result was that of 246 patients who were given toxin only one had a relapse.

SOME EXPERIENCES WITH SPINAL ANAESTHESIA

BY

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The following remarks apply to some 500 cases in which spinal anaesthesia was used for all kinds of operations in lesions below the diaphragm—mostly in the upper abdomen and chiefly on the gall-bladder and bile ducts. In order to keep the conditions as uniform as possible I have used the same anaesthetic and given all the injections myself. The anaesthetic employed was durocaine light solution (specific gravity 1002). It was put up in phials of 3 c.cm., each cubic centimetre containing planocaine 0.1 gram, gliadin 0.00325 gram, in 15 per cent. ethyl alcohol. Recently the supply ran out and could not be replenished ; however, Messrs. May and Baker were able to make a substitute (M & B 116) of the same specific gravity, which seems to act practically as durocaine.

Technique

Whether any one reagent has a decided advantage over any other I do not know, but I am sure it is wise to become as fully acquainted as possible with one and develop a uniform technique with it. In this way a confidence is acquired which otherwise would be uncertain.

The procedure adopted in practically all my adult patients has been as follows. Nembutal, 4½ grains, is given by the mouth three and a half hours before operation, and a further 3 grains half an hour before operation, with morphine 1/4 grain, atropine 1/100 grain, and ephedrine 3/4 grain. Other basal anaesthetics have been tried, but discarded in favour of the above. On arrival in the theatre the patient is nearly always asleep, but stirs when pricked, though there is no memory of this. With the patient on his left side and the back fully flexed a drop or two of novocain is injected into the skin in the middle line of the space between the third and fourth lumbar vertebrae, and a spinal needle of the Barker type is inserted here into the theca. A little fluid is run off, 2 c.cm. collected into the syringe which already contains the 3 c.cm. of anaesthetic solution, and then returned moderately quickly into the theca. The rate at which the injection is made is kept as constant as possible. If the pressure of the cerebro-spinal fluid seems higher than usual rather more is run off before injecting. The speed of injection is, I feel sure, one of the factors concerned in the distance to which the anaesthetic reaches, and it is very important, therefore, that this part of the technique should be performed by the same person each time.

Immediately the injection has been made the patient is turned on his back and the table raised to bring him into an upright sitting posture, in which he is kept until there is no response to pinching of the skin with a sharp-toothed forceps just below the umbilical level. At this stage the patient is promptly lowered into a moderate Trendelenburg position, the degree being such that shoulder supports are just necessary to prevent him sliding towards the head end of the table. It usually takes about three minutes, or just under, for anaesthesia to reach the level indicated, and a few minutes later it is found that the upper limit has risen to half-way between the nipple and the clavicles.

Controlled Height of Anaesthesia

During this stage of the procedure two points are clearly established. First, if bleeding occurs through the spinal needle and persists so that blood-stained fluid is drawn into the syringe, there is no certainty as to the efficacy

of the anaesthetic. Secondly, the height of anaesthesia can be quite definitely controlled by the position of the patient—for example, when a lower limb is to be amputated or a prostate removed, the patient is not placed in a sitting position at all, and the anaesthesia of the skin does not rise above the level of the umbilicus. This is important from the practical point of view, and seems to me to point clearly to the method by which the anaesthetic is disseminated in the thecal cavity when other factors are kept constant. Variations in speed and quantity of injection alter the level of anaesthesia, but I think there is better control by keeping these factors constant while varying the time of the patient's position.

Marked muscular relaxation is a well-known feature of spinal anaesthesia, and materially facilitates access to deep-seated parts in fat patients. There is also a complete absence of any tendency of the abdominal viscera to thrust into the wound, and in those cases in which the organs need to be packed out of the way the ease with which this can be done and maintained is remarkable. Moreover, omentum can be placed at the end of the operation just where it is wanted, and the absence of intestinal excursions allows it to remain in position.

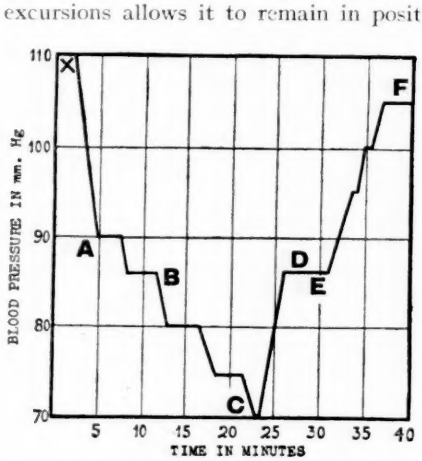

FIG. 1.—Case of duodenal ulcer. Operation: posterior gastro-enterostomy; appendicectomy. X = Spinal injection. A = Peritoneum opened. B = Gastro-enterostomy begun. C = Ephedrine 3/4 grain. D = Appendix removed. E = CO_2 and O_2 begun. F = Operation finished. Forty minutes.

After-effects

I have had no deaths under spinal anaesthesia. In a few cases there has been a complaint of headache; this appears to come on when the patient is propped up in bed, and can be relieved quickly by the recumbent attitude; I have only once seen this headache sufficiently severe really to worry the patient. I have had one case of strabismus; this lasted three days and then completely vanished. There have been no other ill consequences of spinal anaesthesia in my cases. Post-operative chest complications are no more frequent than after ether; in fact, the general post-operative course is smooth, and usually unaccompanied by vomiting or flatulence. When the anaesthetic effects begin to pass off they continue to do so rather rapidly, and I think the patients often require morphine earlier than when ether is used, for wound pain. There seems to be no doubt that many patients with acute conditions, especially those with acute obstructions, have a much easier post-operative course than those who have had ether anaesthesia, due to less disturbance of the factors concerned in acid-base balance of the blood.

With so many apparent advantages held by spinal anaesthesia, why is it not more widely used? There is only one reason which has any real weight with me, and that is the fall in blood pressure which is so constantly associated with high anaesthesia.

Fall in Blood Pressure in High Anaesthesia

It is part of the routine procedure to take systolic blood pressure tracings throughout the operation. With anaesthesia extending to just short of the clavicles the usual occurrence is a fall in pressure beginning about five minutes after the spinal injection, and reaching its maximum descent in ten to fifteen minutes. This coincides with the abdominal incision and the opening of the peritoneal cavity, and the graphs give the impression that the fall has something to do with these manipulations; but I think the fall is mainly coincidence, since the same thing occurs at the beginning of any operation in which anaesthesia reaches a high level, even when the abdomen is not opened. I am quite sure it is the height to which the anaesthetic rises which accounts for the fall in blood pressure. The average fall is about 40 mm. of Hg—that is to say, an initial blood pressure of 120 in fifteen minutes drops to around 80, and thereafter fluctuates near this level, usually rising in forty-five minutes to approximately the original figure. It is at this time that the anaesthesia induced by durocaine is rapidly passing off. (Figs. 1 and 2.)

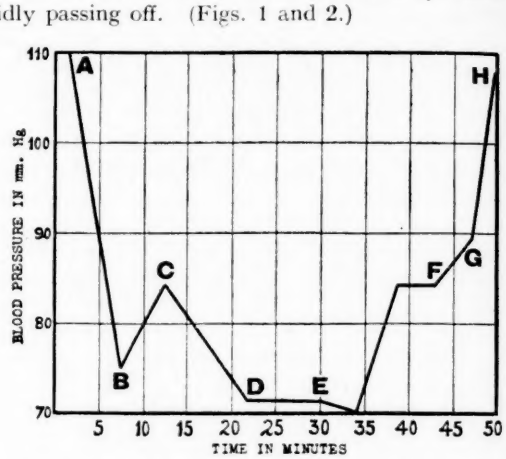

FIG. 2.—Case of gall-stones. Operation: cholecystectomy; choledochotomy; appendicectomy. A = Abdominal incision. B = Peritoneum opened. C = Appendix removed. D = Gall-bladder removed. E = Common duct opened. F = Tube inserted. G = CO_2 and O_2 begun. H = operation finished. Fifty minutes.

Cause of the Fall in Blood Pressure

The principal factors in maintaining blood pressure are: force and rapidity of the heart beat, peripheral resistance, blood volume, and the suction action promoted by chest excursions on venous return. Under high spinal anaesthesia the heart beat is slow and not forcible; it is slowed because the accelerators are put out of action, since they leave the cord for the most part below the second dorsal segment; the tonic action of the vagal nerves remains.

The peripheral resistance is lowered because the vasoconstrictors are paralysed in the anaesthetized area; ephedrine is given before operation with a view to contracting the arterioles by direct action. I am not sure how far it is of use; I am inclined to think that with the patient in the Trendelenburg position it is not necessary. Although I have no definite proof that the anaesthetized limbs increase in size from the relaxed condition of the vessels, it is probably fair to assume they behave in the same way as the penis, which can be seen quite clearly to be distended and relaxed.

It is unlikely that vasomotor paralysis of the lower limbs has much to do with the fall in blood pressure, since there is no fall when anaesthesia is limited to the umbilical level. When anaesthesia reaches the second dorsal segment the splanchnics are put out of action, and, according to physiological evidence, division of both

splanchnics is followed immediately by a marked fall in pressure, which is attributed to accumulation of blood in the relaxed abdominal vessels. I think this is true to some extent in the human being, though it is difficult to prove. The veins in the various mesenteries seem to me to be rather fuller under spinal anaesthesia than when ether is used, but this is not a very marked feature so far as any one vessel is concerned. Possibly, also, the solid organs are distended ; I have no evidence one way or the other as regards this, but it is difficult to believe that the intestines contain an excess of blood, since they are markedly contracted and diminished in calibre. From what I have observed in the abdomen at operation it seems reasonable to conclude that sufficient blood accumulates in the venous side to account for a fall, and probably the greater part of the fall, in pressure under spinal anaesthesia.

Concerning the third factor—blood volume—there cannot be any material deviation from the pre-anaesthetic content of the vascular system, for the following reasons. First, there is no evidence to suggest that fluid is accumulating in the tissues outside the vessels ; secondly, the blood pressure can be so easily raised and lowered by a method to be described below that it is unreasonable to suppose there is any loss of blood volume (apart from the small loss of blood which attends any operation) ; and thirdly, those conditions are absent which can so readily lead to heavy loss of fluid — namely, sweating and deep breathing. To these it is probably right to add that the diminished calibre of the intestines and the absence of any tendency on the part of the latter to prolapse into the wound materially lessens loss of fluid by evaporation. Under ether fluid loss from these sources may be very great, and one of the real assets of spinal anaesthesia is its conservation of fluid within the body.

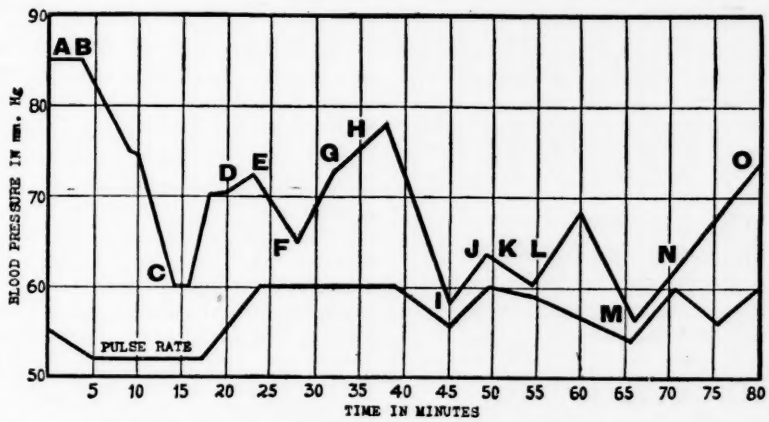

FIG. 3.—Case of carcinoma of sigmoid involving small intestine. Operation: enterectomy, lateral anastomosis ; colectomy, Paul's method. A = Abdominal incision. B = Peritoneum opened. C, F, I, and M = CO_2 on. D, G, J, and N = CO_2 off. E = Enterectomy. H = Entero-anastomosis. K = Colectomy (mobilization). L = Inguinal incision. O = Operation finished. Eighty minutes.

The fourth factor in the maintenance of blood pressure is the venopressor mechanism described by Henderson.[1] He was concerned mainly with the action of carbon dioxide on this mechanism in the post-operative period. Beecher,[2] as the result of an experimental study, denies the value of carbon dioxide therapy in preventing the crippling of the respiratory system after laparotomy. Clinically, my experience coincides with Henderson's conclusions, which ascribe the beneficial effects of carbon dioxide primarily to its action on blood pressure, and, secondly, to its action on the lungs. Whatever the post-operative results may be there is no doubt at all about the effect of carbon dioxide during operation under spinal anaesthesia. I have many graphs illustrating this, of which Fig. 3 is typical. The mixture is 10 per cent. carbon dioxide in oxygen, and it is given through a mask in much the same way as gas and oxygen. After a few breaths there is a very obvious deepening of the respirations without any quickening of the rate and a prompt rise of many millimetres in blood pressure ; the pulse rate remains as before. When the carbon dioxide inhalation is stopped blood pressure tends to relapse almost at once. The sequence of events is so clearly connected with the depth of breathing that the explanation would appear to be the better filling of the heart, induced by the suction exerted on the venous blood.

No doubt other factors are concerned, and probably an important one is the following, which was suggested to me by W. A. Bain of the physiological department in the Leeds Medical School. Accumulation of venous blood in the splanchnic area implies an asphyxial effect on the adrenals, which are thereby excited to active secretion of adrenaline ; this is poured into the adrenal veins. Under the influence of carbon dioxide inhalation the venous blood is sucked into the heart, and a relatively large dose of adrenaline is suddenly passed into circulation. The beneficial effect of carbon dioxide administration is so obvious that I now use it during the early minutes of operation, and I have succeeded, so far as I can judge at present, in limiting materially the initial fall in blood pressure.

The fall in blood pressure, therefore, seems to be due to a widening of the vascular system in the greater part of the body, together with some degree of holding up of the blood in the mesenteric veins particularly. Breathing carbon dioxide in oxygen can rectify and, to some extent, prevent the fall, presumably because of the deep inspiration induced, a suction action being set up which gives the heart more blood to pump forward. The Trendelenberg position assists the blood in its return to the heart. There are some who say it is unnecessary to worry about the fall in pressure, and experience suggests there is some truth in this. However, it seems advisable, with the means at hand, to maintain the pressure as near the original level as possible.

A Curious Occurrence in Spinal Anaesthesia

A curious state of affairs occurs occasionally for which I find difficulty in supplying a satisfactory explanation. Anaesthesia may be so extensive that the patient is apparently unable to appreciate the sensation of a prick or nipping with sharp-toothed forceps as high as the scalp ; the corneal reflex disappears, and yet breathing continues as before. This may happen when the patient has had no previous medication with nembutal ; moreover, though conscious at the beginning of the operation, the patient falls asleep at this stage of extensive anaesthesia.

There seem to be two possible explanations. First, the anaesthetic is absorbed into the blood and so distributed all over the body ; however, the same dose is used as for a low anaesthesia, when absorption must occur, and yet it is never followed by the phenomena just described, and animal intravenous experiments seem to discount this theory. Secondly, dissemination occurs along the spinal canal into the skull in an attenuated form. It is known that cocaine and its derivatives act more readily on the sensory nerve fibres than on the coarser motor fibres, and perhaps novocain and its derivatives act in the same way ; it is possible this is the reason the phrenics escape. One would expect the blood pressure to fall very low if the

anaesthetic reached the medullary level and beyond, and in most of the cases I have seen this has happened. In one of my cases, however, the pressure did not fall below 85 mm. Hg, and that is not an unduly low pressure in any case of high spinal anaesthesia. Whatever the ultimate reason may be, I believe it is initiated by maintaining the erect sitting position too long. I think this was undoubtedly why the patients in two of my earliest cases developed respiratory paralysis: both recovered after keeping up artificial respiration for about twenty minutes, with intravenous gum saline in one, but the experience was a very unpleasant one. I have had no similar cases since.

Animal experiments show that novocain derivatives, such as are used for spinal anaesthesia, can, when applied directly to the floor of the fourth ventricle, produce respiratory failure; so can a very low blood pressure, indirectly, by causing anaemia of the bulb centres. I doubt whether, in the human being, the anaesthetic ever reaches the medulla in sufficient concentration to cause primary respiratory stoppage. On the other hand, if no means are taken to check the fall in blood pressure it can drop to between 50 and 60 mm. Hg without cessation of breathing, but so low a pressure must be getting very near the level at which an effective circulation cannot be maintained. The lowest pressure recorded in my series was 42 mm. Breathing became very shallow, but did not cease; prompt administration of carbon dioxide and intravenous gum saline quickly carried the pressure to over 80 mm., and it did not fall again below 60 mm. This occurred during excision of the rectum by Kraske's method.

In practice I regard a pressure of 80 mm. as an indication for carbon dioxide, and now I seldom see a pressure as low as 65 mm. If there was not a prompt reply to carbon dioxide I should at once infuse gum saline, or saline alone, if the other were not handy.

Effect of Spinal Anaesthesia on Smooth Muscle

Temporary paralysis of the vaso-constrictors of the somatic areas is well known as a result of spinal anaesthesia, but relaxation of smooth muscle generally is not one of its characteristics. This is clearly seen in the abdomen. Immediately the peritoneal cavity is opened, and before any manipulation of the intra-abdominal viscera is begun, the contracted state of the small intestine and the activity of its peristaltic movements are striking events. The calibre of the intestine is reduced to that of an ordinary lead pencil, and at intervals of two or three inches strong contractions of the circular muscle appear to obliterate the lumen entirely. The large intestine cannot be seen easily without some manipulation, but it can be felt to be strongly contracted, and gives the impression that one is handling a thick-walled rubber tube. Strong segmental contractions occur here also, and this state of affairs is noticeable as far down as the sigmoid. Curiously enough the stomach, which is the most muscular part of the intestinal tract, does not show anything like the same degree of activity; nevertheless, contractions can be seen, especially on handling the organ. The bladder does not appear to be contracted, nor does it alter its contour when handled. Since it receives its parasympathetic supply from the lower end of the cord, one would not, of course, expect it to show any activity under spinal anaesthesia.

These observations seem to fit in with the physiological data, which point to general inhibition occurring (with few exceptions) in the splanchnic area as a result of sympathetic stimulation. The removal of this inhibitory mechanism under spinal anaesthesia allows the unaffected vagi free scope for their motor display. That the vagi are concerned in this hyperactive state of the intestine is, I think, quite clearly shown by two further observations I have made at operation. First, when the abdomen is opened under local anaesthesia considerable activity of the intestine is seen, but it is not nearly so marked as when a spinal anaesthetic has been given. Secondly, drawing down the stomach strongly, pulling on the caecum, and manipulating the gall-bladder and bile ducts under spinal anaesthesia produced a feeling of oppression and nausea which was often promptly followed by vomiting. It was thought that this was probably due to vagal impulses, and might be prevented by blocking the vagi. Consequently a fair quantity of 1 per cent. novocain was injected all round the oesophagus at its junction with the stomach. Vomiting was prevented in patients so treated as soon as the abdomen was opened, also the intestines ceased almost at once to be contracted and no longer writhed about, except locally when touched with the fingers. Sometimes there was a fall of a few millimetres in the blood pressure, but whether this was a part of the fall which is usually observed at this period of the operation, or whether it was due to a further widening of the splanchnic vascular bed, could not be decided.

There is a good deal to learn about spinal anaesthesia, and I think from it, if we observe carefully. It almost never fails, except in the occasional case when blood is drawn into the syringe, and with the technique I have described I feel confident of its safety. I still use ether quite often, and frequently have comparable cases performed under the two anaesthetics. Generally speaking, the patients receiving spinal anaesthesia are more comfortable next day and suffer distinctly less from flatulence. I am sure this is so if one compares the more difficult cases, and especially those of not too good a risk; in these one does not see the flushed face, hyperpnoea, dehydration, and dyspnoea which occur after ether, and indicate acid-base changes. Without wishing to appear to decry the value of ether or to extol unduly that of spinal anaesthesia, I think we are rather apt to overlook the post-operative morbidity which may reasonably be attributed to ether, since it is definitely a tissue poison and especially damaging to kidney function. Rather a severe criticism of it is made in a recent publication by Bhatia and Burn.[3]

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A report has been issued of the seventh annual conference on health education, which was held in London last November under the auspices of the Central Council for Health Education. It contains abstracts of the speech by Sir George Newman in which he indicated the lines of advance necessary for further education; the review by Dr. James Fenton of the development of the public health system in this country; and the contributions made by Professor J. A. Nixon and Dr. W. G. Savage to the discussion on the education of the public in regard to nutrition, in the course of which reference was made to the Somerset scheme for the teaching of cookery and marketing to girls in schools. Briefer notes are also supplied of the second discussion on the education of the public in respect of the consumption of milk. Copies of the report may be obtained from the offices of the Central Council, 1, Upper Montague Street, Russell Square, W.C.1.

DIPHTHERIA IN THE TROPICS

A SUBCLINICAL DISEASE IN NEGROES

BY

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Though diphtheria is considered to be uncommon in the Tropics, it does occur in tropical latitudes every year. The following table gives the evidence of this disease as recently reported in a supplement to the *Tropical Diseases Bulletin*.[1] It covers 1931, which is probably quite a representative year.

TABLE I

Country	Population	Cases		Deaths	
		1931	1930	1931	1930
Sudan	—	183	68	—	—
Ceylon	4,504,599	68	86	29	30
Federated Malay States ...	1,324,890	143	112	28	31
Straits Settlements ...	—	—	—	43	31
Hong-Kong	1,143,510	231	95	—	—
Barbadoes	120,391	9	—	—	—

This table brings out three points. (1) The case incidence for the populations exposed to risk is quite low if no cases were missed. (2) The proportion of deaths to cases indicates a high mortality rate. (3) The marked absence of reported cases in those parts of the Empire which have a predominantly negro population—that is, Africa and the West Indies—is a notable feature.

The Disease in Negroes

The following observations tend to offer some measure of explanation for this variation in prevalence, more especially in regard to the negro. As a basis for discussion certain well-known postulates may be mentioned: (1) A case of diphtheria indicates infection overcoming host resistance. (2) The existence of "carriers" indicates resistance to virulent organisms. (3) A negative Schick reaction, unless artificially produced, indicates one or more prior infections which, if a negative history of diphtheria be present, have been *subclinical* in character.

I. Negro Resistance

The relative infrequency of diphtheria in the negro may be attributed to a greater resistance.

The best evidence for this is available in the Southern States of the U.S.A. Here, a large coloured population lives under mainly the same conditions as the white population. Doull[2] gives the following table of mortality rates in white and negro races for the years 1917-24 in ten States of the U.S. registration area.

TABLE II*

States	Period Included	Average Annual Mortality per 100,000	
		Whites	Negroes
Kentucky	1917-24	15.9	10.7
Virginia	"	14.5	8.1
Mississippi	"	13.6	8.8
Maryland	"	13.5	7.5
Tennessee	"	13.3	9.0
North Carolina	"	12.1	7.9
Georgia	"	11.1	7.3
South Carolina	"	11.1	6.1
Florida	"	10.2	4.3
Louisiana	"	7.4	5.3

* The rates are adjusted for differences in age constitution between populations concerned, the population of the Continental United States in 1920 being taken as a standard.

This table would appear to show that: (*a*) mortality rates in both races tend to be lower in lower latitudes; (*b*) mortality rates in the negro races are strikingly lower in every State listed. The same observer has been able to show that in Baltimore "*morbidity* rates from diphtheria in recent years have been less than one-third as high for the negro as for the white population." He states further that the difference can hardly be due to poorer reporting of negro cases, since in the public schools cases in both races stand about an equal chance of recognition, so that if cases in negroes were missed it must have been because they were *mild in character*—again indicating the superior resisting power of the negro to this infection.

II. Prevalence of Infection

The relative infrequency of diphtheria in the negro race is NOT *due to absence of infection in the Tropics.*

Wherever in the Tropics the subject has been studied, *C. diphtheriae* has been isolated from throat cultures.

Thus Gomez and Navarro (Manila, 1923) cultured the throats of 1,222 children, finding five carriers. A further series of 2,843 cultures, undertaken at Singapore in 1931, resulted in 145 positives. Again, Garrido-Morales (Porto Rico, 1931) cultured 642 children and found nine carriers.

The writer secured cultures from 300 coloured children in Nassau, Bahamas, aged from 1 to 10, with four carriers. Cultures were taken from the tonsils and grown on Loeffler's blood serum. Subsequently this culture was transplanted to tellurite-serum agar for purposes of isolation. The number of carriers of virulent bacilli when cultures are taken from a random sample of children in the Tropics, as indicated in these observations, show an incidence in Manila of 0.4 per cent., in Porto Rico of 1.4 per cent., and in Nassau, Bahamas, of 1.3 per cent. In Singapore 5 per cent. of specimens submitted were positive, but these came from hospitals, and presumably represent a selected group. Doull and Fales[3] (1923) in three surveys of Baltimore children found a mean incidence of 1.75 per cent.

It will be seen therefore that the organism exists in tropical areas almost as frequently as in northern areas, and in two of the regions cited there is a relatively large coloured population. Although I have isolated the organism from the throats of coloured children in Nassau, diphtheria has never, in so far as I am aware, been reported in a coloured patient. The disease, however, is observed among the whites and has caused some deaths.

The condition known as "veld sore," "septic sore," "desert sore," "Barcoo rot," which is prevalent in some parts of the Tropics and is said to be due to *C. diphtheriae*, suggests that in these latitudes the organism may exist as a saprophyte. Manson-Bahr[4] states that he observed the condition during the war among men of mounted units, especially those associated with camels, and that the sores appeared mostly on exposed areas covered by hair (dorsum of the hand, forearm, etc.). In South Africa it is familiar to sportsmen and travellers.

III. A Subclinical Disease

The relatively high frequency of immunes among negroes in the Tropics indicates, in the absence of reported cases, that diphtheria tends to be a subclinical disease in this race.

During the past ten years a great many observers have carried out Schick tests on groups of individuals living in the Tropics and subtropics. These studies have been made on many different races—the Portuguese in Brazil, the Filipinos in Manila, the Malays, Chinese, and Indians in the Federated Malay States, and the aborigines in East Africa. In every case these investigations have brought out the fact that there is a high frequency of immunes in the Tropics, and some investigators have been able to demonstrate the mechanism of natural immunity.

Thus Harries[5] (1927) observed four Schick-positive individuals who were "carriers" of virulent diphtheria organisms, and who became Schick-negative during the course of three weeks. Garrido-Morales[6] (1931) observed 194 Schick-positive children for a period of three months. At the end of this period he found that 20.1 per cent. had become Schick-negative.

During March of 1934 the writer was able to Schick-test a random sample of 300 coloured children, and also a small group of white children in Nassau, Bahamas. The results in the coloured group are shown in Table III and in the white group in Table IV.

TABLE III

Material		Results			
		Negative		Positive	
Males	Females	Males	Females	Males	Females
148	180	94.1 %	87.2 %	5.9 %	12.8 %
Total 328		90.27 %		9.23 %	

TABLE IV

Material		Results			
		Negative		Positive	
Males	Females	Males	Females	Males	Females
16	26	66.6 %	57.1 %	33.4 %	42.9 %
Total 42		62 %		38 %	

It will be seen, therefore, that in the coloured group some 90 per cent. were negative, while in the white group just over 60 per cent. were negative. It is true that the numbers—especially in the white group—are quite small, but in both cases they represent random samples of the population at the ages of from 1 to 10, and I am of the opinion that the examination of larger groups would not show very different results.

The evidence presented has, I think, some interest to the physician who has charge of white children in a tropical area such as the West Indies, where a large coloured population lives alongside a very small white population. Years may pass without a single case being reported, yet the organism may be present, and when a case crops up in a white child the diagnosis may readily be missed.

Summary

1. The negro resists infection with *C. diphtheriae* better than the white.

2. *C. diphtheriae* can be isolated from the throats of coloured children in areas where no cases are reported.

3. Schick tests reveal a high degree of antitoxic immunity in coloured populations.

4. Diphtheria is an ever-present peril to the white child in the Tropics.

5. Evidence is submitted which tends to show that diphtheria among coloured persons in the Tropics tends to be subclinical.

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G. Gouverne (*Thèse de Paris*, 1934, No. 830), who records a personal case of enterococcus meningitis secondary to influenza in a man aged 28, with a review of the literature, states that the former is a rare affection. The subjects are usually young persons. The condition is rarely primary, but is, as a rule, secondary to a previous infection, such as influenza, some digestive disturbance, or a suppurative focus in the cranio-facial region. Although the enterococcus is often the only organism found, it may be associated with others, such as the meningococcus, tubercle bacillus, or *Micrococcus catarrhalis*. The prognosis is very grave, as the issue is almost always fatal. The diagnosis is impossible clinically, and can only be made by bacteriological examination.

Clinical Memoranda

Haemorrhage during Operations, Especially Thyroidectomy

Surgeons differ greatly in their concern for the amount of blood a patient loses during operation. I well remember thirty years ago watching a very eminent brain surgeon performing a craniotomy to remove the Gasserian ganglion; he turned down a big scalp flap with absolutely no regard for the arteries spurting in all directions, left them for the house-surgeon to pick up as best he could, and went on with the trephining. On the other hand, there is Lord Moynihan's story of the distinguished visitor from the Continent watching him carefully secure every vessel in an abdominal operation before cutting it, and remarking, "And is British blood then so precious?" Unquestionably, many patients who have been alleged in the past to have died of shock were really the victims of too severe a loss of blood, which could and should have been prevented. Of late years, especially during operation for the removal of the thyroid gland for thyrotoxicosis, it has been the custom in my practice to keep a roughly accurate measure of the quantity of blood lost. Fortunately, in this operation there are several possible halting places: one may terminate the surgical procedure after tying the superior thyroid artery, or again after securing the inferior thyroid, or after a hemithyroidectomy, and again after following the same steps on the other side; that is to say, there are five possible halts short of a bilateral subtotal thyroidectomy. Up to about fifteen ounces the loss of blood is well borne; after twenty ounces there are usually definite signs of danger; it is unjustifiable to go on doing more, if a halt is possible, when the loss exceeds twenty-five ounces.

The method of estimation is quite simple. Before operation the weight of, say, twenty ordinary gauze swabs is ascertained by weighing. After the sterile cloths have been laid around the neck the whole area where blood may trickle down is well packed with plenty of swabs. The haemorrhage is kept sufficiently under control to ensure that none gets on the surgeon's gown or on the floor. From time to time the swabs used for mopping, and those packed round the neck, are given to a dresser to be counted and weighed; a simple calculation gives the weight of the swabs and the weight of the blood. Usually a little soaks into the sterile cloths, and one has to add an ounce or two to cover this. The loss of time during the operation is practically *nil*; the margin of safety obtained is considerable. In the majority of cases the amount of blood lost is about ten ounces; it may be as low as three or as high as twenty-five.

Operations on the neck call for a far more studied care in haemostasis than is usual in other parts of the body, or there may be very serious bleeding from an insecurely tied vessel after the patient has gone back to bed. It is my practice to transfix, with a curved needle and catgut, all but the tiniest vessels, to use a three-cast instead of a two-cast knot, to tie the big arteries twice over, and to ask the anaesthetist to let the patient come round and cough or strain vigorously before closing the skin incision.

There should be a special nurse in attendance for at least twelve hours. If these precautions are observed the old bugbear of reactionary haemorrhage need be feared no longer.

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Reviews

RECTAL SURGERY

The second edition of Mr. J. P. LOCKHART-MUMMERY'S textbook on *Diseases of the Rectum and Colon*[1] is an important addition to recent surgical literature. Since the publication of the first edition of the book in 1923 it has been a standard international work on rectal and colonic diseases, and the new edition will justify its popularity and usefulness. A large part of the work has been completely rewritten, and there are several added chapters—notably on precancerous conditions and acute intestinal obstruction. The book is much more conveniently arranged, and its binding and size are an improvement upon the first publication. Many new figures have been added, and the actual photographs of operations should prove extremely useful. The surgery of the rectum and colon has progressed a good deal during the last decade, and the author ably states and assesses the value of these advances. Mr. Lockhart-Mummery has succeeded in giving a lucid account of the essential details of diagnosis and treatment, operative and otherwise, so that the book will prove acceptable not only to the general surgeon, to whom it will be of the greatest value, but also to the general practitioner. The clear style and the justifiable dogmatism with which it is written make the text easy to read.

Rectal surgery in particular depends for successful results upon careful and thorough after-care, and the book contains the fullest instructions concerning pre-operative and post-operative treatment. The chapters on cancer of the rectum are especially instructive, and it is shown that the method of grading rectal carcinomata as employed at St. Mark's Hospital is already producing facts of great importance. The concise table of references should prove valuable. Proctology has certain principles peculiar to itself, and these are adequately illustrated and emphasized. The work is strongly recommended, and the author and publishers must be congratulated on a notable production.

STRÜMPELL'S TEXTBOOK OF MEDICINE

This well-known textbook of medicine was first published over fifty years ago. Many editions have been brought out in Germany, the present[2] being the thirty-first–thirty-second by the curious method of numeration adopted; and the text has been translated into English, Italian, Spanish, French, Russian, modern Greek, Turkish, and Japanese. The author died in 1925, but his former assistant and collaborator continues to revise the book and bring it up to date. It is essentially practical, and, as the present editor points out, only those diagnostic and therapeutic methods which have proved useful in his own hospital of 800 beds in Leipzig have been admitted.

It is obviously impossible for a reviewer to read through these two volumes of 1,800 pages, so that sampling has been adopted. Turning first to the sections which the author claims to have revised or rewritten, one finds a good description of Bang's disease, cases of which have been reported at intervals in English medical periodicals. The author has seen and followed a sufficient number to be able to classify the clinical varieties. As this disease is common, and yet often one of the unrecognized varieties of chronic pyrexia of unknown origin, it should be constantly kept in mind. The whole section on stomach diseases has been altered to bring it into line with modern Continental views about the frequency of gastritis, which, it is held, is the underlying factor not only in organic diseases of the stomach, such as ulcer and cancer, but in those conditions previously considered to be functional, such as hyperacidity and achylia. On the other hand, gastric and duodenal ulcer are dealt with separately, the modern English view being that they should be taken together as peptic ulcer. Gall-bladder disease is described on the customary lines by which cholecystitis and cholelithiasis are taken to be phases of the same complaint; while no account is given of dyskinesia of the gall-bladder as described by Newman. In kidney disease, too, nephrosis is still included as a form of nephritis. The anaemias also are described on standard lines, and classified as secondary anaemia, chlorosis (very rare), pernicious anaemia, constitutional haemolytic anaemia, and the anaemias of childhood (simple and pseudo-leukaemia). The sections on treatment, however, are adequate and up to date. Professor Seyfarth has rewritten the chapters on myocardial disease and chronic joint disease, and these are good. There is a useful summary of endocrine gland affections.

Strümpell has always been strong in the section on nervous diseases, and this is one of the best parts of the book; the chapter on psychoneuroses has been rewritten on modern lines. The book gives the pleasure one has in meeting an old friend rehabilitated in health and fortune. The new edition is handy, and yet full of useful information. It is, of course, essentially a German practical textbook, but it could be used with advantage by those who contemplate going to Germany or Vienna for post-graduate work, or those who wish to learn to read German medical literature; their knowledge both of medicine and of that language will be helped. Research students require a more detailed discussion of the various problems, such as are contained in larger works.

RECONSTRUCTIVE SURGERY

Just as the names of certain pioneers in medicine and surgery will ever be associated, despite all the efforts of terminology reformers, with the conditions or procedures they first described, so the name of Esser will go down to posterity linked up, in the minds of all who take an interest in reconstructive surgery, with rotation and artery-pedicle flaps, and with that form of free skin grafting known as the epithelial inlay. Esser was the first to stress that prime essential to success in free skin grafting, pressure-dressing, capable of maintaining or sufficient to maintain intimate contact of graft with raw surface; and, although his technique has already undergone modification, it is to his original work that we owe the uniformly successful results in intrabuccal and orbital grafting in post-war surgery and the greatly increased certainty of "take" in grafting in other situations in civil cases.

Esser's recently published volume[3] on biological or artery flaps is a monumental work of 176 royal quarto pages and contains 420 plates illustrating the results of the author's work, the extent of which is indicated by the inclusion of a bibliography of his ninety-two contributions to the literature of the subject. The book is dedicated to the Committee of Honour of the "Institut Esser de Chirurgie Structive," and a preface by Jean Louis Faure of Paris refers to the amazing enthusiasm and untiring energy expended by Esser in his efforts to establish this institute on completely international lines. The institute

[1] *Diseases of the Rectum and Colon and Their Surgical Treatment.* By J. P. Lockhart-Mummery, F.R.C.S., M.A., M.B., B.C. Second edition. London: Baillière, Tindall and Cox. 1934. (Pp. 616; 247 figures. 35s.)

[2] *Lehrbuch der Speziellen Pathologie und Therapie der Inneren Krankheiten für Studierende und Ärzte.* Two volumes. Edited by Dr. med. et phil. C. Seyfarth. Berlin: F. C. W. Vogel. 1934. (Pp. 880 and 980; 399 figures, 17 tables. RM. 48; geb., RM. 54.)

[3] *Biological (and Arterial) Flaps.* By Professor F. S. Esser. Monaco: The Editor of the "Institut Esser de Chirurgie Structive." 1934. (Pp. 176; 420 plates.)

is to devote itself to the treatment of disfigurements and deformities of every kind in cases, rich or poor, of any nationality, and it will draw to itself for this purpose from all nations surgeons of repute in the different spheres of repair work. An outline of the objects of the institute indicates clearly how great a boon to mankind this should prove.

Beautifully printed on excellent paper, the book is concerned, as its title indicates, with biological flaps. The author has reluctantly added the alternative title "Artery Flaps" to make the meaning clearer—reluctantly, because the pedicles of the flaps he describes contain lymph vessels, veins, and nerves in addition to specific arteries. "A free transplanted flap would have a better chance of living than a flap with artery intact and veins and branches definitely destroyed" is a quotation from the text which will carry a very real message to all who have had the sad experience of watching a flap in which these conditions have been produced by thrombosis of main efferent channels. In the transplantation of skin by the more usual form of flap it is probable that the inclusion of nerve supply in the pedicle is of little importance, for sensation rapidly returns to even completely isolated skin grafts, but when highly specialized cells are transplanted—and Esser includes in biological flaps the transplantation of digits and even larger parts of limbs—it is obvious that nerve supply is essential.

Reference is made to corneal grafting and to efforts (which failed) to transplant an artery flap from one patient to another. A time is foreseen when it may be possible to transplant a limb in part or whole from a fresh corpse. The photographic records are well reproduced and illustrate satisfactory functional (biological) results. As the final photographs were for the most part taken soon after active surgical treatment was finished, the cosmetic results are occasionally somewhat crude. The book is of unusual interest, and will well repay careful study by all working in this branch of surgery.

YEAR BOOK OF GENERAL MEDICINE

As in previous editions, the *Year Book of General Medicine*[4] for 1934 is divided into five parts, devoted to infectious diseases, diseases of the chest, diseases of the blood and blood-forming organs, diseases of the kidneys, diseases of the heart and blood vessels, and diseases of the digestive system and metabolism. In the section on infectious diseases Dr. G. F. Dick pays special attention to arthritis and allied conditions, as well as to the common acute infectious fevers, including influenza, acute poliomyelitis, psittacosis, rheumatic fever, and the like. Diseases of the chest, including tuberculosis, are discussed by Dr. Lawrason Brown. In the section on diseases of the blood and blood-forming organs Drs. G. R. Minot and W. B. Castle point out that the purely pictorial and descriptive study of the blood is being replaced by a physiological consideration, the blood cells being regarded no longer as elements with variations in age, size, and shape, but as objects reflecting the results of various chemical processes in the bone marrow and elsewhere. In the section on diseases of the kidneys the same authors note the tendency to regard only certain cases of nephritis as infectious in origin, as well as the tendency to consider the vascular changes as the cause, not the result, of renal damage in an increasingly large group of patients. In the section on diseases of the heart and blood vessels Dr. W. Stroud considers the subject under the headings of aetiology, anatomical changes, physiological abnormalities, including angina pectoris, treatment, electrocardiography, miscellaneous aspects, and peripheral blood vessels. Diseases of the digestive system and metabolism are discussed by Dr. G. B. Eusterman, who deals with recent work on diseases of the oesophagus, stomach, and intestines, including amoebiasis, as well as diabetes, exophthalmic goitre, gout, obesity, and allied topics.

[4] *The 1934 Year Book of General Medicine.* Edited by G. F. Dick, M.D., Lawrason Brown, M.D., and others. Chicago: The Year Book Publishers, Inc.; London: H. K. Lewis and Co. Ltd. 1934. (Pp. 843; 112 figures. 3 dollars, or 12s. 6d., postage 9d.)

VETERINARY MEDICINE

The second edition of the *Encyclopaedia of Veterinary Medicine, Surgery, and Obstetrics*,[5] edited by GEORGE H. WOOLDRIDGE, professor of medicine at the Royal Veterinary College, London, is a great improvement on the first edition. It is worthy of its title, and may be taken as representing fairly the best information the veterinary profession as a whole has to give the community in this country to-day. The editing is well done, and Professor Wooldridge has enhanced the reputations of his many and wisely chosen collaborators by associating them with himself in this great effort.

So large a canvas could only be covered properly in a British studio. Many of the finest contributions in these volumes come directly or indirectly from men who had their training and experience in the Services of our overseas Dependencies and in the Army. These advantages, rather than material things, are the justification of empire. Indeed, the work would have gained if even more reliance had been placed on these sources of evidence. It is weak chiefly in places where sections seem to have been composed in the editorial study without adequate first-hand information. For example, the sections on mange and so-called contagious equine pleuropneumonia could have been more accurately written by men with first-hand knowledge of these diseases gained by bitter practical experience in the war of 1914–18, when their incidence dwarfed all other outbreaks of these and similar equine scourges. Again, in discussing the filariasis of dogs the editor would appear to be unaware of the distribution and importance of the *Filaria immitis* in certain British colonies. Those who have done duty in a South Sea island, where nearly 100 per cent. of the dogs die from filariasis under 3 years of age, will not be satisfied by being told that "the general condition may be maintained by cardiac tonics and a generous diet," and by other misconceptions which could have been avoided by reference to someone with first-hand experience.

We are glad to note that the work under review is far more free from the stink of the old-time pharmacy than former publications, but the deliverance is not complete. Art is long. There are several instances of such advice as the following, given for the treatment of pneumonia: "For the horse and cattle a very useful combination consists of quinine sulphate 1 drachm, potassium iodide and ammon. carb. of each 2 drachms, and pulv. nux vomica 1 drachm." The reader is left wondering by what form of scientific experimentation this was determined in regard to (*a*) the horse and (*b*) the ox. In the section on colic in the horse it is rightly stated that the main objects in its treatment are the relief of pain and the removal of the cause. Elsewhere in the section, however, full doses of such drastic agents as eserine, arecoline, and even barium chloride are advised in "colic complicated with constipation." The authors would have done better to discourage sternly the use of these violent drugs in any case of acute abdominal pain. The academic approval which has in the past been given to these agents has led to the routine use of the first two of them in full doses by many young veterinary practitioners in all cases

[5] *Encyclopaedia of Veterinary Medicine, Surgery, and Obstetrics.* Edited by George H. Wooldridge, F.R.C.V.S. Second edition. In two volumes. Vol. i, *Veterinary Medicine.* Vol. ii, *Surgery and Obstetrics.* London: H. Milford, Oxford University Press. 1934. (Pp. 1,652; 362 figures. £6 6s. net the set.)

of colic, including those that are found later to have a twisted gut or other potentially fatal lesion, and a vast amount of needless suffering has been and is being thereby caused.

Why is there no chapter on the humane destruction of animals? At a time when many, if not most, private veterinary practitioners depend largely on dog and cat work—and a not negligible part of this is humane destruction—we are surprised to find that the matter is not even noticed in a veterinary encyclopaedia. It is futile for veterinarians to complain of the unscientific destruction of small animals by the animal defence societies and by lay individuals so long as the study of humane killing is ignored in veterinary textbooks, and especially in one which in other respects seems to be complete.

THE DRUG TRAFFIC

Inside Dope,[6] by FERDINAND TUOHY, relates in a colloquial and attractive manner the recent history of the traffic in drugs of addiction. The author claims an experience alike extensive and peculiar with the ways of the underworld in Montmartre, Toulon, Marseilles, and New York. He paints a lurid picture of the addicts of morphine, heroin, and cocaine, but he is less condemnatory of opium smoking, and passes lightly over the consumption by Indian natives of Government-controlled opium. While recognizing the assiduous labours at Geneva under the League of Nations to regulate the licit production of the opium alkaloids and cocaine, he is appalled by the extent of the illicit traffic and the multiplication of clandestine factories both in Europe and in the Far East. "Leakage, leakage, leakage—such is the tale, eternal in the broader and, one would suppose, more closely checked channels for this traffic," and Mr. Tuohy quotes copiously from Russell Pasha's reports on the gangs of smugglers he has exposed in Egypt and the Mediterranean littoral. He speaks pessimistically of the work of the Advisory Committee of the League of Nations, and holds that, despite its labours, "the drug position has grown steadily worse, until to-day it may, without fear of contradiction, be said that the world narcotic situation has got clean out of hand." He allows that in England the position is not bad, thanks to the Dangerous Drugs Act of 1920 having been enforced. Elsewhere he accuses customs authorities of laxity and bribery, and calls for "hammer-strokes" and "abrupt business" to compel observance of international obligations, and thus to stop the "great tonnage of dope in excess of world requirements which is being manufactured." The racy style of the author is embellished with much "Americanese."

Notes on Books

Volume liv of *The Transactions of the Edinburgh Obstetrical Society*[7] covers the session 1933–4, and is the twelfth issued under the arrangement with the *Edinburgh Medical Journal*. Its contents include the valedictory presidential address of Dr. James Young, in which he discussed problems relating to the maternity hospital and unitary control. Topics dealt with in papers published in this volume are: the presence and effect of the ovarian hormones and gonadotropic substances (Professor S. Aschheim); the position of general practitioner midwifery (Dr. W. Hamilton); pyuria in the puerperium (Dr. Dugald Baird); blood pressure variations (Dr. A. T. B. Dickson); contractions of the human pregnant and non-pregnant uterus (Dr. Chassar Moir); Caesarean section (Drs. W. F. T. Haultain, E. M. Robertson, and J. B. Dewar); and the aetiology of leucorrhoea in the virgin (Drs. R. Cruickshank and A. Sharman). Notes are given of the ensuing discussions in each case. Lists of present and past office-bearers and of Fellows of the society are supplied, with the accounts for the year ended October 31st, 1933.

The seventh instalment of *Chinese Materia Medica*,[8] published by the Pekin Natural History Bulletin, is devoted to dragon and snake drugs, and is the work of BERNARD S. READ of the Henry Lester Institute for Medical Research, Shanghai. The term "dragon" is applied not only to fossilized remains of prehistoric animals but also to whales, crocodiles, alligators, pangolins, and a number of species of lizards, while among the snakes are ranged groups of animals, some of which are only remotely related zoologically, such as pythons, pit-vipers, grass snakes, water snakes, and sea snakes.

[6] *Inside Dope*. By Ferdinand Tuohy. London: Hamish Hamilton Ltd. 1934. (Pp. 256. 6s. net.)

[7] *The Transactions of the Edinburgh Obstetrical Society*. Session 1933–4. Vol. liv. Edinburgh: Oliver and Boyd, Ltd. 1934. (Pp. 152; 11 figures. 15s. net.)

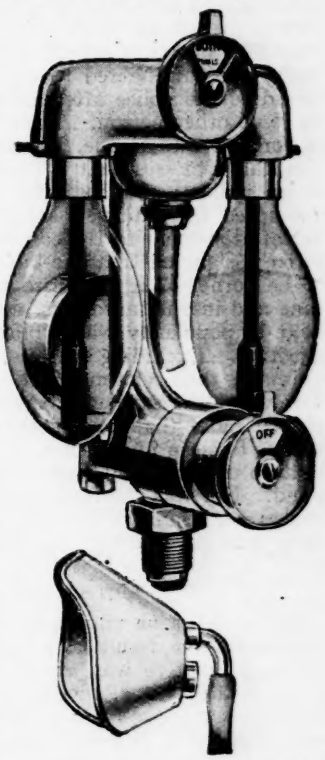
[8] *Chinese Materia Medica*. VII. Dragon and Snake Drugs. By Bernard E. Read. Peiping: The French Book Store, Hôtel de Pekin. 1934. (Pp. 66. 1.50 dollars; 30 cents extra for foreign countries.)

Preparations and Appliances

INHALATION APPARATUS

Dr. A. H. DOUTHWAITE (London, W.) writes:

The treatment of such conditions as asthma, chronic bronchitis, tuberculosis, and bronchiectasis by inhalation of certain drugs has gained much popularity of recent years. The introduction of the Collison inhaler has overcome the impracticability of patients taking a proper course of treatment at home without any irksome or tiresome features usually associated with medical apparatus. It is simple for them to understand, and meets the requirements of modern medicine. It was first exhibited at the British Medical Association Exhibition in 1932.



Mounted on an oxygen cylinder it is provided with two glass phials, which are easily and quickly detachable, for such inhalants as adrenaline in one and camphor or creosote in the other. They are vaporized with oxygen, which is inhaled with the atomized drugs. One or other of the liquids can be nebulized separately or both together at the same time by rotating the top handle, or oxygen only can be employed by itself. The vapour reaches the entire bronchial tree, including the finer bronchi and alveoli, and is dense enough to be effective. It is stored in the bag for this purpose and can be regulated to suit requirements by the lower handle.

The face-mask is fitted with two valves, one for inhaling from the bag and one for exhalation. There is an indicator showing the pressure in the cylinder, marked "Full—3/4 full—Half full—1/4 full—and Empty." A red signal shows when half has been used.

The inhaler may be hired or purchased from the makers, The Inhaling Drug and Apparatus Co. Ltd., 87, Eccleston Square, S.W.1.

EAR DROPS

Sedonan is a solution of 5 per cent. phenyldimethyl pyrazolon (phenazone) in anhydrous glycerin. It is intended for instillation into the ear in inflammation. Under these circumstances it has a favourable action in reducing pain and congestion. The manufacturers are H. R. Napp, Ltd., 3, Clement's Inn, Kingsway, W.C.2.

MURDER AS A PROBLEM OF PSYCHIATRY

THE EXPERT IN THE BOX

Dr. W. NORWOOD EAST, one of H.M. Prison Commissioners, addressed the Medico-Legal Society on January 24th on the subject of murder from the point of view of the psychiatrist. The legal distinctions between murder and manslaughter and the degrees of turpitude in either crime are of little significance in psychiatry, but insanity is alleged with monotonous frequency if no other defence offers itself to the charge of murder, and it is here that the psychiatrist enters the witness-box.

An interesting analysis of cases of murder was given. During the years 1929–32 inclusive there were known to the police of England and Wales 338 cases in which the crime of murder had been committed. In 131 of these the murderer or suspect committed suicide, and in one death was from other causes ; in 179 there was an arrest (184 persons) ; and in the remaining twenty-seven no arrest was effected. Of the 184 persons arrested forty-three were acquitted on trial or otherwise discharged, and eighty-six were found to be insane. Of the fifty-five convicted twenty-seven were executed, in twenty-five the sentence was commuted to penal servitude for life, two were removed to Broadmoor, and one had his conviction quashed on appeal.

MURDERERS' METHODS

Dr. East also drew on his personal experience of 235 men charged with murder who had been examined by him over a period of years. Of these only thirty-five were insane or mentally defective. Of the 200 sane murderers thirty-one surrendered to the police, a further forty confessed to the police after arrest, and twenty-six confessed to some other person. These figures, said Dr. East, were of forensic importance, because it was often suggested to medical witnesses that a confession of murder amounted to an indication of insanity. But a confession might be prompted by remorse ; sometimes it appeared to be an act of atonement to the community for disrupting it ; and often it signified that the burden of secrecy was too great to be borne. The favourite method of killing, with both sane and insane murderers, was with a sharp instrument ; next in popularity was a blunt weapon ; and, after that, shooting. Excluding coal-gas, eight of the sane murderers poisoned their victims, but none of the insane did so. Twelve of the sane murderers and ten of the insane employed more than one method of killing, and this again was of forensic importance, because it was sometimes said that to use more than one method indicated a disordered mind. Nor was the infliction of a multiplicity of wounds a sign of insanity ; one of the sane murderers inflicted sixty wounds, and another forty-five on his victim.

MOTIVE AND INTENTION

Of the 200 sane murderers forty-six were led to commit murder as the result of a quarrel ; in forty-six the predominant motive was jealousy ; in thirty-two, pecuniary gain ; in thirty-one, revenge ; in fifteen, to get rid of an inconvenient person ; in eight, to avoid arrest ; while ten were the result of suicide pacts. Often, of course, there was more than one factor.

In discussing motive and intention Dr. East pointed out that murder committed by an insane person might appear motiveless, but the reason might emerge later. Psychologists viewed with special anxiety cases in which the motive was absent or inadequate. Among the motives for murder most common were the exercise of the acquisitive instinct in its most debased form, the self-preservative instinct, and, next in the running, the self-assertive and sex instincts. He added that it was beyond contradiction that, so far as this country was concerned, the majority of murderers whose original sentences had been commuted to penal servitude more closely approached normality than any other class of criminal. As a result of many years' experience of criminals he had learned to pay great respect to the manner in which juries assessed criminal conduct and insane behaviour after the different points of view had been put to them by opposing counsel and the learned judge.

Crimes of violence due to homosexuality as a rule presented no special difficulties to the psychiatrist. Suicide pacts entered into by members of the same sex might relate to this condition. He had met with one case of murder in which the circumstances of the crime indicated that the deceased man was a masochistic homosexual, and was killed in a homosexual séance. Some murderers appeared to commit crime largely to obtain for a brief space the spotlight of publicity—psychopaths with a craving for prestige, they had been called.

PSYCHOLOGY OF THE HOMICIDE

Dr. East also analysed the mental condition of 300 Broadmoor homicides. The largest class (sixty-two) were melancholics. Sometimes the melancholic was led to kill a near relative in the belief that death was in the best interests of his victim. He instanced the case of an insane man who killed his wife, with this motive ; but, desiring that her last moments should be happy, bought a ring for £180, placed it on her finger, and shot her through the heart. On the other hand, the paranoiac homicide had no such selfless motive. His delusional grievances were turned over constantly in his thoughts until the time came when a consideration of probable consequences no longer inhibited his act. Dr. East touched on alcoholism as a defence in murder, adding that epilepsy had also sometimes been urged as a defence ; but epilepsy was comparatively infrequently associated with this class of crime. Newspapers sometimes spoke of " lust for blood," but he had never come across this as a cause of murder, nor did he know a prison medical officer who had. He had no experience of " compulsion neurosis " as a cause of murder, though he had known it to be a cause of assault. No single mental anomaly was so often put forward in defence as amnesia, but this condition could not be accepted on the mere statement of the accused ; it was essential that it should be corroborated by the circumstances of the crime and by mental examination of the criminal.

It was common for the sane murderer to feign insanity, and, on the other hand, for the insane murderer to pretend to be sane—another complication for the psychiatrist. It had been said that murderers were usually introverted, but that statement had to be considered a little closely. Quite possibly from the time of committing the crime until seen by the psychiatrist they became introverted. It was no doubt true that many insane murderers were introverted, but others were extraverted, and Dr. East's opinion in this respect was fortified by that of a prison medical officer in the course of the discussion, who said that in his experience the more notorious type of cases were extraverted—some markedly so.

DISCUSSION

Dr. L. A. WEATHERLY expressed some disappointment that Dr. East had confined himself to a consideration of psychological causes, because, in his view, physiology also played an important part. He recited one or two cases which had come within his experience. One referred to a lad, extremely well behaved until, as the result of an accident, he had to undergo an operation for the removal of one kidney. From that time he became perverse in behaviour, and he ended by stabbing to death a man, a complete stranger to him, against whom he had no possible grudge, and who was, in fact, at the time doing him a kindness. He inflicted upon him, from the back, a very large number of wounds, although, curiously enough, the lad, whose father was a butcher, had shown a violent distaste for blood, had refused to go near the slaughterhouse, and in a Bible which he carried the word " blood " had been scored out. The defence of insanity was not accepted at the trial, but shortly afterwards the lad settled the matter by becoming undoubtedly insane.

Sir BERNARD SPILSBURY, who presided at the meeting, said that he fully agreed with Dr. East's remark about murderers finding the burden of secrecy too heavy to be borne. He had seen that exemplified in quite a number

of cases, the murderer making some oblique reference, if not a complete confession, before his apprehension. It was not a sign of insanity. The sane murderer would have the crime on his mind from the time of its committal, would be continually turning it over, constructing his defence, and seeking self-justification, until he would come to believe his own story. In these circumstances it would presently become almost impossible for him to keep his thoughts to himself. Another striking feature was the desire of many murderers for publicity. He recalled watching the poisoner Seddon move eagerly to the police court window, where the press photographers could take his portrait.

Dr. East, in a final word about the M'Naghten rules,* agreed that these were illogical, but they served their purposes, one of which was to give English judges the opportunity of extending their directions to juries in individual cases as they thought fit. The advantage of criminal law in this country was its elasticity, with the result that he himself had never known, in thirty-five years, the judgement of death carried out upon an insane man.

THE HEALTH OF THE ARMY

REPORT FOR 1933†

Although in 1933 the admission, invaliding, and constantly sick rates of soldiers were above those for 1932, which was the healthiest year since the war, the general health of all ranks fell little short of that high level. The increase in the rate of admission to hospital in 1933 is more than accounted for by a rise of 17.6 per 1,000 in the incidence of influenza, and of 6.2 per 1,000 in that of malaria. The death rate was lower by 0.21 per 1,000 than that for 1932.

INFLUENZA AND MALARIA

The great majority of influenza cases occurred in the United Kingdom, 7,447, or 40.5 per 1,000, against 4,161, or 22.9 per 1,000, in the previous year. The rate in India was about half this, and the death rate was much lower—namely, 0.05 as against 0.18 per 1,000. The incidence in China was 57.1 per 1,000. Special methods taken to combat the infection included the administration of a creosote mixture with the view to abort common colds; the polishing of barrack room floors instead of wet and dry scrubbing; the placing of centres of amusement out of bounds, when disease was prevalent among the civilian population; the spraying of barrack rooms with a 10 per cent. solution of formalin during the winter months; and the isolation of mild and suspected cases in separate barrack rooms. Inoculation was tried in certain commands, but proved of doubtful value.

As regards malaria, there was an increased number of infections in the Northern and Western commands of India, where abnormal meteorological conditions and, to a lesser extent, active service operations were held responsible. The increase for India accounted for over 1,000 of the total increase of 1,200 cases, while in Egypt, where the highest incidence was in the Sudan and the Canal zone, the number increased from 161 to 306. It is remarked that in India the results of plasmoquine and quinine treatment in benign tertian malaria appear to have begun to have some effect upon the rate of readmission to hospital. It is, however, considered abundantly evident that, despite the increasing effect of sanitary and therapeutic measures, the incidence of malaria in the Tropics is likely to be profoundly affected by meteorological factors for a long time to come.

VENEREAL DISEASE: MENINGITIS: EYE AND EAR CASES

The steady decline in the incidence of venereal diseases continued in the year under review, although there was an increase in Jamaica where, as in China, the disease is extremely difficult to control. Egypt, including Cyprus, and Gibraltar also show increases. There was a considerable fall in the number of admissions for meningococcal infection, but a remarkable case of Group IV meningitis was reported from York. The patient required no fewer than twenty-nine lumbar and three cisternal punctures in the course of six weeks' treatment. A total amount of 1,015 c.cm. of cerebrospinal fluid was withdrawn, and 280 c.cm. of serum was injected. By these means, combined with saline irrigation through combined cisternal and lumbar punctures, the man's life was saved, and he was discharged fit within three months from the time of admission. There were slight falls in the numbers of cases of disease of the eye, ear, nose, and throat. The great bulk of ophthalmic cases are treated as out-patients, and the records of the principal military hospitals at home and abroad, excluding India, show that 5,644 cases were so treated, with over 15,000 attendances. At Shorncliffe an examination of 200 men was undertaken to endeavour to determine the importance of the "master eye" in relation to proficiency in musketry. The results revealed that a number of men had attained a high degree of marksmanship when sighting with the eye other than the "master eye," and it is considered that this factor is of questionable importance. There are still many cases of admission to hospital, and of invaliding, due to diseases of the middle ear, although careful recruiting and the examination of doubtful cases by specialists have eliminated many who would presumably become unfit.

LOCAL INJURIES

The report observes that no other group of morbid conditions is of such outstanding importance in the Army as local injuries, from the point of view of the provision of hospital beds. Many of the most severe injuries, necessitating long treatment in hospital, and in many cases ultimate invaliding on account of permanent unfitness for service, have been due to motor accidents, especially with motor cycles. The admissions for local injuries during 1933 amounted to 9,200, a ratio of 50 per 1,000. This represented an increase in actual numbers of 74, although there was a slight fall in the ratio, which was 50.2 in the previous year. Local injuries accounted for a ratio of 2.71 per 1,000 constantly sick, which represented 498.91 men constantly in hospital. The deaths resulting from these conditions amounted to sixty-two, a ratio of 0.34 per 1,000, the outstanding figure for mortality in the Army. Fracture cases, numbering 2,349 admissions to hospital, accounted for twenty-three deaths and twenty-one discharges as permanently unfit for service.

MISCELLANEOUS

Diseases of the digestive system continue to cause a relatively high admission rate both at home and abroad. The treatment and disposal of cases of gastric and duodenal ulceration in serving soldiers is receiving very careful attention. A special cardiac centre is being organized with the most modern equipment for diagnosis. There is a steady increase in the number of cases of epilepsy proved to have a cysticercosis origin. Chloroform as the sole anaesthetic drug is losing favour steadily, whereas the use of nitrous oxide gas, alone or in association with oxygen, or oxygen and ether, is advancing in popularity, as also is percaine, but the general opinion of nembutal is unfavourable. Increasing use is being made of diathermy for surgical operations. Investigations were continued at the Army School of Physical Training with regard to the effects of a new type of deep-breathing exercise on the vital capacity of the lungs. The result was a considerable gain in favour of the platoon using the new method. Exercise tolerance tests were carried out experimentally on all assistant instructors at the School. In every case there was a decrease in the resting pulse rate, a decrease in the pulse rate after exercise, and a quicker recovery after exercise. Pathological work has included modification of the present typhoid-paratyphoid vaccine, enhancing the protective value of the typhoid element; disproof of the value of a prophylactic anti-influenza vaccine; and improvement in the preparation of certain agglutinating and blood-typing sera by a new method of concentration.

* The famous deliverance of the judges in the House of Lords in 1843 on the question of criminal responsibility in insanity.

† *Report on the Health of the Army for the Year 1933.* Vol. lxix. London: H.M. Stationery Office. 1935. (2s. 6d net.)

British Medical Journal

SATURDAY, FEBRUARY 2nd, 1935

THE THERAPY OF MACROCYTIC ANAEMIA

The discoveries in connexion with pernicious and similar types of anaemia during the past eight years are among the greatest achievements of modern medicine, and the main facts which they have brought to light are beyond dispute ; but several recent papers serve to remind us that obscurities still remain. What we do know is that for a certain stage in red cell formation, failure at which results in a macrocytic anaemia, a substance is necessary which is found in the normal liver and is formed by the interaction of a product secreted by the stomach (intrinsic factor) and an element contained in certain foods (extrinsic factor). The supply of this haemopoietic substance to the bone marrow may fail in any one of three principal ways: the stomach may cease to secrete the intrinsic factor, as in " idiopathic " pernicious anaemia ; the diet may be deficient in extrinsic factor ; or the absorption of the combined product may be prevented by disorders of the intestine. On this basis the occurrence of an anaemia " of the pernicious type " in a variety of other diseases, such as gastric carcinoma and sprue, is satisfactorily explained, as are the striking effects of treatment not only with liver but with stomach extracts. To other perhaps less common types of interference with this mechanism must now be added the further apparently distinct entity described in this and our previous issue by Drs. Wilkinson and Israëls—a macrocytic anaemia having no ascertainable cause, which fails to respond to treatment with liver active principle. The crucial experiment in their report is the effective treatment of a case of pernicious anaemia with an extract of liver from a fatal case of " achresthic " anaemia: it seems clear from this that the liver active principle had been normally available in the fatal case, but for some reason could not be utilized by the marrow.

Some further new observations which tend only to confirm and elaborate the fundamental facts outlined above are those of Klein and Wilkinson,[1] who have prepared a therapeutically active substance with the properties of the active principle in liver (including that of thermostability) by incubating *in vitro* a hog's stomach extract with lean beef. They contrast and compare the properties of the principle obtained from liver, the product of this experiment, and the active element in hog's stomach ; it seems clear that the two former are identical, whereas the latter differs in important physical and chemical respects. It is suggested that " the relation between the anti-anaemic principles in stomach and in liver is that of an enzyme to an end-product."

[1] *Biochem. Journ.*, 1934, xxviii, No. 5, 1684.

The main difficulty with which investigators are still contending is the identity of the extrinsic factor. According to Dr. Lucy Wills[2] macrocytic anaemia occurring in Indian women on a grossly deficient diet could be strikingly relieved by a preparation of autolysed yeast, and it was at first thought that the extrinsic factor supplied in this form was identical with vitamin B_2 ; but Miss Wills's own subsequent work[3] showed that other materials, including fresh yeast and egg-white, which contain adequate amounts of vitamin B_2, are without effect on this type of anaemia. The conclusion that this vitamin is not the extrinsic factor is supported by the observations of Lassen and Lassen[4] on the treatment of pernicious anaemia with incubated mixtures of yeast preparations and gastric juice. On the other hand, it is contested by Miller and Rhoads,[5] who claim to have obtained a haemopoietic response with incubated mixtures of gastric juice and either egg-white or a concentrate of rice polishings. There has also been some doubt whether the extrinsic factor alone, whatever it may be and in whatever form it be furnished, is of any therapeutic value in idiopathic pernicious anaemia. Ungley[6] finds that a definite haemopoietic response is secured in some cases of pernicious anaemia by the administration of certain yeast preparations, although this is never of the degree obtainable with liver. That this effect is due to the extrinsic factor, and not to the existence in yeast autolysates of fully formed " liver active principle," has now been proved by Ungley and James[7] by the process of administering an extract by different routes: active when given by the mouth, it was without effect when given by the rectum or by intramuscular injection. It follows from this that some cases of pernicious anaemia still secrete a reduced amount of intrinsic factor, and the utility of this diminished secretion can be enhanced by furnishing an excess of extrinsic factor upon which it may act. Finally, these authors are unable to confirm the observation of Parsons and Hawksley[8] that yeast preparations are of therapeutic value in nutritional hypochromic anaemia.

In the work of these and some other recent authors conflicting findings are not uncommon, and it is as well to remember that this type of study is beset with difficulties. The only perfect subject of experiment, in so far as the study of pernicious anaemia is concerned, is an untreated case: not only are these infrequent nowadays, but it must often be difficult to decide how long the administration of experimental and ineffective preparations can justifiably be continued. Proceedings which to say the least are distasteful frequently become necessary ; much of our present knowledge is built on the results of administering one individual's stomach secretion to another, and an important experiment referred to earlier really amounts to a refined form of cannibalism. In so far as yeast

[2] *British Medical Journal*, 1931, i, 1059.
[3] *Lancet*, 1933, i, 1283.
[4] *Amer. Journ. Med. Sci.*, 1934, clxxxviii, No. 4, 461.
[5] *New England Journ. Med.*, 1934, ccxi, No. 20, 921.
[6] *Quart. Journ. Med.*, 1933, ii, 381.
[7] Ibid., 1934, iii, 523.
[8] *Arch. Dis. Child.*, 1933, viii, 117.

derivatives are concerned, a difficulty is that some of the most effective preparations are proprietary products, the method of manufacture of which has perhaps naturally not been fully disclosed, although the published work of investigators of anaemia has given them a free advertisement of inestimable value. Though these manufacturers are fully entitled to the fruits of their good fortune in accidentally furnishing valuable remedies, it is to be hoped that they will be content with the legitimate use of their products, and not seek to foster indiscriminate and uninstructed administration in anaemia of all kinds. The spheres and limits of usefulness of liver preparations and iron, as well as of yeast preparations, are still somewhat imperfectly recognized in the profession itself. Such uncertainty as the facts really justify is all connected with the nature and functions of the extrinsic factor, and further progress towards the actual identification of this substance may be expected with confidence.

THE MALARIA EPIDEMIC IN CEYLON

Malaria has been endemic in Ceylon for centuries, and the present epidemic which has broken out with disastrous results in a previously healthy part of the island has created a considerable amount of sensation. The newspapers, not unnaturally, have taken the matter up, and, as a result, the general public is perhaps inclined to think that a disease has appeared which was hitherto unknown in that part of the world. The epidemic, however, can cause no surprise to malariologists, and for this reason it will be well to describe briefly the actual conditions regarding endemic malaria in Ceylon and the factors which have a bearing on the present severe outbreak.

The endemicity of malaria in Ceylon has been carefully and very thoroughly investigated by Carter.[1] In the island endemicity is low in the south-west area, which includes almost the whole of the Western Province and the western half of the Southern Province. Here the spleen rate varies from 0 to 10 per cent., and, therefore, this part can be considered relatively healthy so far as malaria is concerned. Conditions are favourable to health and agricultural development. The rainfall, owing to the prevalence of the south-west monsoon, varies approximately from 100 to 200 inches per annum, and the rivers have an abundant flow of water, which keeps them flushed and free from larval breeding places. Apart, however, from this comparatively healthy zone in the south-west the greater part of Ceylon, about two-thirds of the island, harbours malaria continuously in a highly endemic form. The spleen rate varies from 40 to 60 per cent. or over. Spleen rates of 80 per cent., 90 per cent., and sometimes 100 per cent. occur. This area includes the eastern half of the Southern Province, the low country of the province of Uva, the greater part of the Eastern and Northern Provinces, and the central and northern portions of the North-West Province, and the entire North Central Province. These highly malarial provinces were evidently prosperous in the past, as evidenced by the huge derelict water tanks, the buried cities, and the now neglected irrigation system ; but malaria holds this large area in its deadly grip, so preventing the economic development of the greater part of the island.

It is clear that the beautiful island of Ceylon consists of two main zones. A healthy and prosperous land exists in the south-west, with a low parasite and spleen rate associated with a high annual rainfall. The inhabitants are mostly non-immunes, and the principal malaria-carrying mosquito *Anopheles culicifacies* is relatively scarce, owing to the absence of suitable breeding grounds. The unhealthy zone, where malaria is highly endemic, harbours conditions eminently favourable for the prolific breeding of *A. culicifacies*. The inhabitants of this area are relatively immune, and consequently epidemic malaria is not so evident, although it is impossible for non-immunes to live there with safety. The full force of the present epidemic is therefore most marked in the hitherto healthy, prosperous provinces of the south-west, which contain a relatively non-immune population. As far as can be ascertained at the moment the prevailing rains brought so regularly by the south-west monsoon failed to supply the usual amount of water, and conditions arose which favoured the breeding of *A. culicifacies* in pools along the beds of rivers and streams. Transmission of malaria became active owing to the increased density of malaria-carrying mosquitos, and played havoc in a community unaccustomed to it. Sickness was followed by the failure of crops, impoverished conditions, and a low state of general health. This sudden unexpected malaria epidemic has demonstrated once more how unusual climatic conditions may cause a disastrous state of affairs in a previously healthy place. Fortunately for Ceylon, earlier surveys show that the malignant tertian parasite is a relatively scarce species, responsible for about 10 per cent. of infections. Benign tertian predominates and occurs in about 57 per cent. of cases, while quartan is found in 33 per cent. This possibly explains the rarity of blackwater fever in the island. How far the percentages of the species of parasites have altered in this epidemic is unknown.

While no blame can be attached to the Government of Ceylon for the present sudden outbreak, a lesson has been administered which demonstrates the need for continual research in malaria. As a result of the discovery of Ross over thirty-five years ago great progress has been made in antimalarial work, and in many instances the economic value of malaria control has been proved beyond all question. The success of such control, however, can only be attained after a thorough investigation has brought to light the true state of affairs in the particular areas concerned. Without delay the authorities should set up an organization composed of men with scientific knowledge and practical experience of malaria control.

[1] Carter, Henry F.: Report on Malaria and Anopheline Mosquitos in Ceylon. 1927. Government Record Office, Colombo, Ceylon. (Rs. 3.30.)

CHEIROPOMPHOLYX

The striking eruption known as cheiropompholyx, the characteristic feature of which is the development of vesicles and bullae on the hands and feet, was first described in 1873 by the late Tilbury Fox under the name of dysidrosis, but the term "cheiropompholyx" we owe to Sir Jonathan Hutchinson. There was some discussion as to the priority of discovery, but in any case the united efforts of the two sponsors soon established the condition as a distinct clinical entity or syndrome. Sixty years have now elapsed, but the problem of its aetiology remains unsolved: it formed the basis of an interesting discussion last summer at the meeting of the British Association of Dermatology at Newcastle. Tilbury Fox himself attributed the condition solely to a dilatation of the sweat ducts caused by excessive secretion, a view which is reflected in the term "dysidrosis," a term not infrequently used even to this day. There is no doubt that hyperidrosis is a well-marked feature of some cases, but it is equally true that cheiropompholyx may occur without hyperidrosis and hyperidrosis without cheiropompholyx. Since 1910 the discovery made independently by Whitfield and Sabouraud that vesicular eruptions of the hands and feet may be caused by ringworm fungus has led many dermatologists to attribute cheiropompholyx to the activity of an epidermophyton, and particularly on the Continent and in America the great majority of cases are considered to be of this nature. Quite recently Ragab published a monograph on the subject, and came to the conclusion that the vast majority of cases were mycotic in origin; but the force of his arguments is rather vitiated by the fact that all the illustrations given in his monograph are typical of ringworm of the feet and hands, and do not much resemble the condition which we, in this country, would label cheiropompholyx. Drs. McLauchlan and Herbert Brown,[1] in reviewing the whole subject, came to the conclusion that cheiropompholyx is not a disease *sui generis*, but a form of cutaneous reaction due to a variety of causes, and Muende[2] is of the same opinion. In the first place the eruption is often the result of a contact occupational dermatitis, and all who are familiar with industrial dermatitis will recall the frequency with which typical sago-grain vesicles are found on the sides of the fingers and on the palms, while in severe cases the vesicles coalesce to form bullae. Again, cheiropompholyx frequently appears in patients who suffer from other cutaneous manifestations, such as eczema and urticaria, to which the term "allergic" is nowadays commonly applied. It may therefore be considered one of the manifestations of the allergic diathesis. Clinically it is impossible to draw a definite line of demarcation between cheiropompholyx and eczema. The peculiar vesicles and bullae which justify the name are to be ascribed to the anatomical characteristics of the skin in the situations in which the eruption occurs. It may, then, be regarded as a variety of acute eczema, and, as in other allergic manifestations, the hereditary factor seems to be important. Then there is a third class of case in which the appearance of the eruption is connected with mycotic infection: but not always in the same way. In one type of case the eruption is unilateral, and here the vesicles may actually be demonstrated to contain mycelium, and may be looked upon as actually caused directly by the infection. In the other variety the eruption is bilateral, and in these Muende points out that it has never been possible to recover the fungus from different vesicles on both hands, while at the same time many of these cases show positive trichophytin reactions, proving that fungoid infection has taken place. The inference is therefore that in the bilateral cases cheiropompholyx is a specialized allergic eruption due to an acquired sensitiveness caused by a localized mycotic infection. It follows that the present teaching as regards the whole problem is that cheiropompholyx may be (1) a dermatitis of external and/or industrial origin; (2) a manifestation of either general or special allergy; (3) an immediate reaction to the presence of mycotic infection.

[1] *Brit. Journ. Derm. and Syph.*, 1934, xlvi, 45.
[2] Ibid., p. 479.

HIGH BLOOD PRESSURE IN CHILDREN

Stating that arterial hypertension in children is not such a rarity as is commonly supposed, Drs. R. Pierret and G. Lefebvre of Lille in a recent paper[1] supply useful details of the causation and estimation of raised blood pressure in the young, especially urging that school doctors should make a greater use of the sphygmomanometer. These authors prefer the Pachon oscillometric method, and they point out that a special type of armlet in proportion to the size of the child's arm is essential. In estimating the blood pressure in children certain precautions are thought necessary, including several successive estimations and a calm child, while hypertension is only diagnosed when there is a constant elevation of the maximum systolic pressure of at least 20 mm. of mercury above normal. This at once raises the question of what is to be regarded as normal blood pressure in children. In the present study the authors employ a formula which may be stated as 90 mm. plus "the age in years multiplied by ten and divided by three." (In the original article centimetres are given instead of the millimetre nomenclature in use in this country.) The types of hypertension met with in children are described as permanent and transient. In the former category are included primary or essential hypertension (possibly the precursor of this condition in adults), and raised blood pressure due essentially to permanent renal changes or to congenital coarctation of the aorta. Transient or functional hypertension is to be found in children above the average height and weight for age; in the course of acute and subacute kidney lesions; sometimes in the presence of cardiac failure; almost constantly in acrodynia or "pink disease"; in some instances of increased intracranial pressure; and possibly in certain endocrine disturbances, although this last group is little understood in childhood. The symptomatology of hypertension in children depends in part upon the type present. It is suggested that the condition should be suspected in all instances of unusual obesity and in backward children. With reference to the latter the authors, as mentioned above, think that the school medical officer should pay more attention to blood pressure observations. Any child picked out as "fragile," restless, turbulent, or incapable of attention and sustained effort should, according to

[1] *L'Écho Méd. du Nord*, 1934, ii, 799.

these views, have the blood pressure estimated. In Pierret and Lefebvre's paper it is stated that the condition of hypertension was latent—in the sense of not presenting any of the symptoms usually associated with this disturbance—in the majority of cases. Occasionally the heart presented certain signs such as a ringing aortic second sound, and, more rarely, a gallop rhythm at the apex. The pulse was sometimes noted to be hard and of good tension. Treatment and prognosis of hypertension in children depend upon the cause. Obviously in cases of renal origin of a permanent nature the outlook is poor and treatment cannot help. Indeed, in all instances of permanent hypertension the physician can do little more than prevent accidents and prescribe general hygienic and dietetic measures. Rest is important for this type, and certain forms of spa treatment are recommended. The transient varieties of hypertension yield to treatment of the underlying condition.

FRIEDMAN'S PREGNANCY TEST

Friedman's valuable and easily performed test is now well established in clinical midwifery practice. The rationale of the test is based on the fact that the anterior-pituitary-like substance in pregnancy urine, when injected into the circulation of a virgin adult rabbit, leads to the formation of haemorrhagic follicles in the ovary. In general, one or two 10 c.cm. injections of fresh morning urine are made. Some workers use one injection of 10 c.cm. of morning urine and examine the ovaries of the rabbit forty-eight hours later ; others use two separate injections of 10 c.cm. at twenty-four hours' interval and examine twenty-four hours after the second injection. Most workers are content with one rabbit for the test, and in the great majority of cases this undoubtedly suffices, for only about 1 per cent. of tests are false positives and about 5 per cent. false negatives. In a recent paper[1] a modification of the test is used which greatly reduces the false results ; 20 c.cm. of freshly voided morning urine is injected into two rabbits, and the ovaries are examined forty-eight hours later. Duplicate tests are necessary, because, as these workers discovered, 3.4 per cent. of rabbits are for some reason refractory to pregnancy urine. In this way it was found that the false negatives were reduced to 0.55 per cent. and the false positives to 0.09 per cent. in a series of over 1,000 cases, it being thus shown that the test, if carried out in duplicate, is almost infallible. Now in pregnancy the stimulus to the formation of anterior-pituitary-like bodies is the functional chorion, and it thus follows that in an ectopic pregnancy there must be a similar response as long as the chorionic villi are functional. Hence in the intact ectopic there is no distinction from an ordinary uterine pregnancy so far as the Friedman test is concerned. In fact, however, over 30 per cent. of tests in demonstrable ectopic cases are false negatives, and Frank and his co-workers suggest that this high percentage of fallacious results is due to the fact that the test is frequently done when tubal abortion or rupture has occurred, or when the chorionic tissue is either degenerated or completely separated from the circulation. Even in intrauterine pregnancy the test becomes negative if separation or degeneration of the chorion has occurred. But as long as a functional chorion is retained, even if the foetus is dead, the test remains positive. Indeed, these workers found the Friedman test positive up to thirty days from the death of the foetus, this event being diagnosed from the disappearance of oestrin from the blood. Having regard to these matters, it is clear that the test has its limitations, and can only be evaluated in conjunction with other clinical findings, fallacies arising particularly in ectopic cases and after the death of the foetus.

[1] Goldberger, M. A., Salmon, U. J., and Frank, R. T.: *Journ. Amer. Med. Assoc.*, October 20th, 1934, p. 1210.

WORKING-CLASS FLATS

The exhibition of modern working-class flats, now on view at the offices of the Ministry of Health, Whitehall, S.W.1, will remain open to the public till Monday, February 11th. (Hours 11 a.m. to 5 p.m. weekdays ; Saturdays, 11 a.m. to 1 p.m.) The material for this exhibition has been supplied by local authorities, the Royal Institute of British Architects, the Housing Centre, the Building Centre, a number of housing associations, and private individuals. The development of design and planning, with the provision of amenities, is amply illustrated by drawings, plans, photographs, and models. The private balcony is a notable feature. It is a far cry from the barrack-like tenement of old to these buildings, incorporating, within the limits of strict economy, all that is best in twentieth century architecture. This exhibition shows plainly that, where the population has to be rehoused near the present site, the erection of blocks of flats facilitates the clearing of the slums and the relief of overcrowding and the provision of comfortable working-class dwellings of a good standard.

NAMES OF ENDOCRINE PREPARATIONS

Certain difficulties regarding drug nomenclature are discussed in a recent editorial in the *Journal of the American Medical Association*[1]: they are, alas! only too painfully familiar to those studying the literature on endocrinology, a science whose natural complexity is much intensified by the utter confusion in its terminology. In this field of study a single substance may have a dozen different names, and a single name may be applied to a range of preparations whose identity is extremely doubtful. The trouble arises in part from the intricacy of the subject. For example, it appears probable that the anterior pituitary gland secretes a range of compounds with slightly different chemical structures and different physiological actions. Every preparation is likely to contain a different blend of these principles, and hence it is unsafe to assume that any two preparations are identical. Again, similar but not identical hormones are obtained from the urine. Such a state of affairs makes the adoption of a rational nomenclature well-nigh impossible owing to imperfect knowledge of the subject. The article mentioned above considers it best to refer to hormones of uncertain nature or action by such phrases as " lactogenic factor of the anterior pituitary." This method has the disadvantage of being very cumbersome, but is probably the best because the only alternative is the introduction of an unlimited number of coined words. These

[1] October 13th, 1934.

inherent difficulties have, however, been added to by disagreements about priority of discovery and by the introduction of proprietary trade names. Both of these causes have resulted in a multiplicity of names—even for substances whose identity has been established with fair certainty—and difficult and controversial points have been raised. Thus the Council on Pharmacy and Chemistry of the American Medical Association has recognized the names "theelin" and "theelol" for the crystalline compounds isolated from the urine of pregnant women, and the article already referred to states that these names are non-proprietary and should be preferred to various rival names. "Theelin" is, however, quoted in the list of proprietary trade names in Appendix XIV of the current *B.P.C.* as the name of the product of a particular manufacturer, and this at once creates a difficulty for writers in this country. Drug nomenclature has always been a problem, for such terms as "physostigmine" and "eserine," and "hyoscine" and "scopolamine," have been rivals for more than half a century, while the two names "epinephrine" and "adrenaline" are of more recent origin. The fact that rival names once established may persist indefinitely shows the importance of trying to set up an agreed nomenclature, whenever this is possible, and of avoiding the acceptance of names unsuitable for general adoption. Once a drug has become firmly established in clinical practice the *Pharmacopoeia* usually provides an official name, but until this happens the situation is not easy, and during the probationary stage there are obvious advantages in the use of descriptive phrases rather than unsuitable names.

PLASMA PROTEINS AND CARDIAC OEDEMA

Several factors are believed to be concerned in the production of cardiac oedema: slowed circulation inadequate for the metabolism of the tissues, resulting in increased water-binding power of the cell constituents; increase in the hydrostatic pressure in the capillaries, favouring the passage of water out of these vessels and hindering its passage into them; altered permeability of the capillary; and lowered osmotic pressure of the blood plasma, which affects the water exchange in the same way as an increase in the capillary pressure. Blood analysis on a number of cardiac cases with and without oedema has been made by W. A. R. Thomson,[1] who finds a definite lowering of plasma protein in the oedematous cases, and a slight lowering in those free of oedema, as compared with the normal value. Occasionally, however, the plasma protein may be of normal concentration in a case with oedema, while the osmotic pressure is definitely lowered. This is to be explained by an altered albumin-globulin ratio, albumin being diminished and the globulin content greater than normal. In discussing the cause of the plasma protein deficiency Thomson excludes both hydraemia—which would affect albumin and globulin in the same proportions—and loss in the urine and in the oedema fluid itself—which is considered to be too small to account for the observed depletion. Malnutrition is thought to be the important factor, some degree of this being present in all cases of cardiac failure. Protein intake is customarily cut down in treatment, and, moreover, protein regeneration may be reduced as a result of impairment of liver function. In this connexion it is interesting to note that experimentally the repeated withdrawal daily of 25 to 100 c.cm. of blood failed to deplete the plasma protein appreciably or to give rise to oedema: this suggests that, in addition to protein loss, some deficiency in the mechanism of regeneration is necessary for the production of oedema. The digestive powers of the patient with cardiac oedema are usually low, and he commonly takes a small diet with restricted protein. On the ground, however, that such a restriction tends to perpetuate or aggravate oedema, it is urged that as much protein as the patient can tolerate should be given in the most easily digestible form.

[1] *Quart. Journ. Med.*, October, 1934, p. 587.

FAMILY MENUS

As will be seen from the Proceedings published in our *Supplement* this week (p. 34) the Council of the British Medical Association has appointed a special committee, including most of the members of the former Nutrition Committee, for the purpose of reporting in detail on Diet No. 16 of the original document.[1] One of the criticisms levelled by lay persons at the earlier report was that the calories and food values were all very well in committee but of not much use in the kitchen. A most important step has been taken to remove the grounds of this criticism by the actual cooking of dishes and the formulation of menus from the foodstuffs listed in Diet 16—for man, wife, and three children. With the assistance of cookery experts menus have been drawn up for a period of three weeks, so as to secure a variety of dishes from the food available. It is not necessary to possess a *cordon bleu* to perform these culinary operations, which have in fact been carried out by young women in their first year of training at a cookery school. The pies, puddings, joints, and soups have been photographed, and it is hoped, after publication of the menus and recipes in the *Supplement*, to issue a pamphlet with coloured illustrations for the use of housewives and of girls learning to cook. The Council considers that a small "cookery book" of this kind will be of great value, in that it will provide a wide public with exact and practical instruction on how to preserve domestic economy with no sacrifice of caloric value or of the essential ingredients of a well-balanced dietary.

[1] Report of Committee on Nutrition, *Supplement*, November 25th, 1933. Reprinted in pamphlet form, price 6d. British Medical Association, Tavistock Square, W.C.1.

The governing body of the British Post-Graduate Medical School has appointed Colonel A. H. Proctor, D.S.O., M.D., M.S., F.R.C.S.Ed., I.M.S., as dean of the School in succession to Dr. M. H. MacKeith, who resigned recently for reasons of health.

At a special commemorative meeting of the Hungarian Psychological Society held on January 26th the president, Professor Ladislaw Benedek, director of the Clinic for Nervous and Mental Diseases at Debrecen, gave an address on Hughlings Jackson and his work, on the occasion of the centenary of Jackson's birth.

TREATMENT IN GENERAL PRACTICE

This article is one of a series on the management of some of the major medical disorders met with in general practice

THE TREATMENT OF EMPYEMA

BY

JOHN FRASER, M.D., F.R.C.S.Ed., F.A.C.S.

In the majority of cases empyema occurs secondarily to a preceding or coincident infection of the underlying lung. It is true that the condition may arise in other ways—as an independent development secondary to a septicaemia, as a lymphatic-borne infection conveyed from the abdominal cavity, as a direct spread from a septic focus in the chest wall. But these are exceptional possibilities, and the fact remains that there is an overwhelming percentage of cases in which the pleural infection is a sequel to inflammation of the lung tissue.

Pneumococcal and Streptococcal Effusions

The first suspicion of trouble where diagnosis is concerned is aroused under two types of conditions. In the first instance a lobar pneumonia has occurred, the crisis has been reached, the temperature falls, and an uneventful convalescence is anticipated. But after a few days symptoms reappear ; pain is complained of in the chest ; there is a short, dry cough ; the temperature rises ; and the general signs and symptoms of a septic focus are in evidence. Such a turn of events will at once arouse suspicion of the true state of affairs, and on examination of the chest the physical signs of an intrapleural fluid accumulation are apparent.

In the second possibility the lung infection has been of the bronchopneumonia variety, in which a streptococcal infection is likely to play an important part: the changes are diffuse, and the alveolar inflammation is apt to be overshadowed by the element of capillary bronchitis. While such a case as this is pursuing its often unsatisfactory course the discovery is made—it may be by chance, perhaps on account of an exacerbation of symptoms—that fluid is present in the pleural cavity. It is important to appreciate the distinction between the possibilities I have outlined, because the pathological considerations which they imply are significant when we come to decide the type of treatment to adopt.

In the first instance the sequence of events points to the fact that the empyema, pneumococcal in character, has arisen at a time when the underlying lung has already resolved and has resumed aerating function ; while in the second we are dealing with a pleural infection which is coincident with a pneumonic change, and, moreover, a pneumonic change distinguished by that degree of bronchitis which seriously cripples the function of the lung tissue. The full significance of this conception becomes apparent when we discuss the problem of treatment. But while the investigation of physical signs and an appreciation of the case history may afford a strong clue to the state of affairs that is developing, the diagnosis is not complete until pus has been recovered from the pleural space ; therefore the investigator proceeds to explore the area under suspicion by means of a Record syringe and a hollow needle of reasonably large bore.

Special Investigations

The recovery of pus confirms the diagnosis, but further investigations are necessary before the campaign of treatment can be planned with full assurance. The pus is submitted to bacteriological examination, and the infecting agent isolated and classified. If it should prove to be a pneumococcus it is an advantage to know the type to which it belongs, in view of the fact that serum treatment may be adopted, for there is a considerable body of evidence that serum is of value in infections of Type I. For similar reasons a streptococcal infection should be classified and typed in so far as such is possible. The second step consists in an *x*-ray examination of the chest: much may be learnt from it—the extent and distribution of the effusion, the demonstration of adhesions, the state of the underlying lung, the evidence of displacement of the heart—details which may be significant in the ultimate plan of treatment. It is true that further lines of examination might be pursued, such as the estimation of the intrapleural tension ; but they are of academic interest rather than of practical importance, and when we are faced with the actual clinical considerations the necessary conditions have been fulfilled when we have (1) aspirated pus from the pleural space, (2) been made aware of the bacteriology of the infecting medium, and (3) examined the chest by *x* rays.

With the information which these details afford we may proceed with reasonable assurance to plan the scheme of treatment that is likely to afford the best results. It is true that a great variety of methods of treatment have been described at one time or another, but it is not my purpose to enter into a review of these: my aim is to describe the procedure which I would adopt in one or other of various possibilities. Before I can come to any decision in any individual case I must assess my information in the following way:

1. What is the general condition of the patient? Is he desperately ill from an overwhelming toxaemia or is he reasonably well?
2. What is the state of affairs in the underlying lung? Has the pulmonary infection subsided or is it still active?
3. What are the physical characteristics of the pus? Is it thin and serous, or is it thick and fibrinous?
4. What is the infecting element? Is it a streptococcus or a pneumococcus?
5. What is the information afforded by *x*-ray examination? Does the film or the screen reveal a massive and diffuse effusion, or is the picture that of a localized and encysted collection?

Indications for Aspiration

It is upon these items of information that a scheme of treatment must be based. When one proceeds to put the scheme into practice there is one or other of two possibilities to be faced. The effusion may be aspirated, the process being repeated from time to time in the hope that ultimately its complete elimination will be secured ; or the chest wall may be opened, the contents of the pleural space be evacuated, and such a measure of drainage be obtained as will prevent re-accumulation and lead eventually to obliteration of the infected space. Decision will depend upon the answers to the questions outlined above.

I shall decide upon aspiration under the following conditions: if the patient is too ill to justify such interference as thoracotomy or rib resection ; if the pus is thin and only partly purulent ; if there is evidence that the underlying lung is the site of infection ; if the infecting organism is a streptococcus ; and if the *x*-ray examination indicates that the effusion is diffuse. If certain of the questions are answered in a positive way, to open the chest wall

would involve very serious risks. Let us suppose that the case under consideration is one of diffuse and generalized empyema. If one proceeds to open the chest wall a pneumothorax is inevitable, the lung of the affected side collapses, and as it does so there is considerable risk that the respiratory movements of the opposite lung may be transmitted to the mediastinum, constituting what is known as a "mobilization" of that structure. Such a development is apt to have a disturbing effect on the mechanism of the heart, and it is obvious that a cardiac unbalance must complicate a situation that is already sufficiently precarious. When it is realized that the diffuse empyema is the type that is likely to be associated with a coincident and active bronchopneumonic change in a lung the aerative function of which is crippled, we appreciate how serious it must be to add the additional burden of a collapsed lung and a mediastinal mobilization.

In view of these considerations I regard it as a sound principle to treat all cases of empyema in their early stages by aspiration. The advantages are evident: the bulk of the infected fluid is removed in a way that ensures the maximum of safety to the patient; there is a minimum of disturbance of the physiological conditions; and if the infection persists we have ensured its localization, so that, when the need arises, what is now a localized abscess may be drained with safety.

Technique of Aspiration

The technique of aspiration is extremely simple. Having chosen the point of perforation—and it should be as far as possible at the lower limit of the fluid accumulation—the skin area is anaesthetized by means of a few drops of 5 per cent. novocain, introduced by a fine needle and hypodermic syringe. The aspiration apparatus is generally of the Dieulafoy or Potain type, and it is important to employ a needle the bore of which is sufficiently large to permit free passage of the pus. The amount of fluid withdrawn will depend upon the amount of the original accumulation, but as the aspiration must of necessity be repeated from time to time it is wise to decompress the part in a gradual fashion, and to remove the fluid in an amount that is short of the total bulk. Any sign of respiratory distress should be accepted as an indication that the limit of fluid removal, at least for the time being, has been reached. The aspiration should be repeated every second or third day, until the temperature remains within normal limits and examination of the chest shows that the accumulation has disappeared.

If, after a period of ten to fourteen days, pyrexia is found to persist and pus accumulation is still evident, we may assume that the empyema is of such a type that drainage, freer than can be afforded by aspiration, is necessary. The failure to respond to aspiration is generally due to the fact that the empyema cavity contains masses of infected fibrinous lymph, and it is obvious that suppuration will continue until these are removed or until they become organized. Such formations are characteristic of the pneumococcal infection; they are less common in the streptococcal variety. It is important that they be removed, for though they may ultimately undergo resolution the process is a slow one, and in the interval suppuration persists. A further disadvantage of delay is the fact that organization is secured at the expense of considerable thickening of the pleural surfaces, a change that must interfere with the freedom of expansion of the underlying lung.

Indications for Thoracotomy

For these reasons it is my practice to carry out a drainage operation when I am satisfied that aspiration, having had an adequate trial, has proved insufficient. Thoracotomy can now be carried out with the assurance that it is being performed under ideal conditions, for it is dealing with what is virtually a residual abscess, and one which is so localized and encysted that its space may be opened without the risk of a pneumothorax developing.

The technique of thoracotomy may be summarized as follows. Local anaesthesia combined with scopolamine hypnosis is the most suitable, but if a general anaesthetic is desired gas and oxygen should be used. The patient lies in a semi-prone attitude, the affected side being uppermost, with the arm raised above the head. The incision is planned so that it overlies the empyema area, and its position will therefore vary according to circumstances; but as the majority of encysted empyemata occupy the lower posterior portion of the pleural space a common situation for the incision is over the eighth intercostal space in the mid-scapular line. It is well that it is not made too high, in case it is overlaid by the scapula when the bone descends upon the chest wall.

These details having been arranged, the operator decides whether the thoracotomy is to be in the form of an incision through the intercostal space or of a rib resection. In children the elasticity of the ribs allows sufficient access by the intercostal route, but if the space is unduly small a rib resection is necessary. In adults the resection operation is probably preferable. The details of the procedure are so familiar that I need not elaborate them, but I would say that when rib resection is practised precautions should be taken to guard against infection of the cut surface of the rib in case a local osteomyelitis should arise. It is well, therefore, to sterilize those parts, as soon as they are exposed, by the application of such an antiseptic paste as bipp. With division of the parietal pleura the empyema cavity is entered and there is a rush of pus to the surface. The evacuation is completed by suction, and all fibrinous clots are removed by means of pledgets of gauze on long-handled forceps. This process of cleansing the cavity must be thorough, but at the same time it must be accomplished with gentleness and care in case the surrounding adhesions are broken down, and the infection thereby dissipated. It is inadvisable to attempt an irrigation of the cavity.

Suction Drainage

Lastly come the questions of wound closure and drainage. The ideal is to close the wound as completely as possible, and, at the same time, to ensure some type of suction drainage that will prevent accumulation of fluid and create a measure of negative pressure in order to encourage expansion of the lung. I have sometimes closed the original wound completely, uniting the muscles with interrupted catgut sutures and the skin edges with silkworm-gut sutures, but, before closure, introducing a rubber tube of medium size through the intercostal space overlying the extreme lower limit of the cavity. In theory this is an ideal method, and sometimes it affords excellent results; but occasionally the wound that has been sutured becomes infected, and if it breaks down to any extent the result is disconcerting, because an open communication between the empyema cavity and the surface may become established. I find it is preferable to institute tube drainage through the original wound, uniting the tissue accurately round the tube in order to prevent the escape of discharge or the entrance of air, the wound being then sealed by the application of bipp and a large dressing applied.

The disposition of the tube is now decided. It is often sufficient to arrange that it is long enough to permit of its free end being placed beneath a quantity of antiseptic lotion contained in a vessel of some kind. By this means the entrance of air is prevented, while the discharge escapes. Sometimes it is an advantage to adopt means by which the cavity is submitted to a constant negative pressure, attaching the free end of the tube to the suction of a rotary pump or to a vacuum bottle. Drainage on

this plan should be continued until the discharge has almost ceased. It is difficult to assign any definite time period to this phase, but on an average it extends from ten to fourteen days. When the drainage tube is removed a small portion of dental rubber is placed in the wound, but it should not enter the pleural space. In a favourable case healing is complete within three to four weeks of the operation.

General Care of the Patient

In so far as the nursing is concerned the patient should be treated in the sitting-up position ; the thighs and knees are flexed to a comfortable degree, while a narrow bolster is adjusted to act as a seat. Abundance of fluid is given by the mouth, and the drinking of fresh orange juice is encouraged. If anything in the nature of a stimulant is required intramuscular injections of coramine are of value. In severe cases 1/120 grain of digitaline should be injected at four-hourly intervals. If there is pronounced toxaemia an intravenous saline improves the general condition in a remarkable fashion, but it is better that it should be administered by the continuous drip method (as by Farquharson's apparatus) rather than as a single large infusion: the latter is apt to induce a pulmonary oedema if the circulation is already weakened.

During the convalescent phase there is sometimes a marked anaemia, especially in cases in which the haemolytic streptococcus has been the infecting agent. In this instance a blood transfusion is of great value, particularly if given in small amounts (10 to 15 oz.) at intervals of four to five days. This precaution is valuable when a septicaemia complicates the local infection, for repeated small transfusions not only improve the anaemia but counteract the infection, which, of course, is responsible for the anaemia.

As soon as the condition of the patient permits efforts should be made to improve the inflation of the affected lung by deep-breathing exercises and by the use of Woulfe's bottles. For the same reason the empyema patient should be encouraged to get out of bed when the return of strength justifies the venture.

Continued Discharge

In a certain proportion of cases discharge from the empyema wound continues. This disappointing feature may have one or other of various explanations. It may be due to a mild degree of osteomyelitis in the cut surface of the ribs if a rib resection has been carried out, and for this reason it is important to attend to the detail of sterilization mentioned above. In a few instances a mass of new bone formation occurs around the sinus, the deposit being thrown out from the congested periosteum. The result is an unyielding osseous ring which prevents contraction and closure of the sinus. The most frequent cause, however, is to be found in the fact that some degree of cavity formation persists at the site of the original collection ; that the drainage has been incomplete, and with the persistence of the inflammation the visceral pleura has become so thickened that expansion of the lung is imperfect: so long as this condition exists cavity formation will continue and the discharge persist. The natural processes of the body may overcome the difficulty, but if improvement is not evident after a reasonable time further operation in the form of a more complete rib resection may be necessary.

A Note on Interlobar Empyema

These remarks apply to the ordinary types of pneumococcal and streptococcal empyemata occurring in the pleural space, but it is well to recall that the collection may sometimes appear between the layers of visceral pleura which line the space between the lobe of the lung —an interlobar empyema. This possibility may be associated with difficulties in both diagnosis and treatment: in diagnosis, because a portion of air-containing lung tissue may overlie the collection of pus and mask the clinical signs ; and in treatment, because a thoracotomy, though exposing the pleural space, may at first fail to reveal the situation of the pus. But if the diagnosis is based upon sufficient evidence the difficulties should be minimized.

The ultimate diagnosis will depend upon two details of evidence: (*a*) the demonstration of the empyema by *x*-ray examination, and (*b*) the recovery of pus through the exploring needle. The latter fact leads me to mention a point that is of vital importance in the operative treatment of empyema. It is that before the operation of thoracotomy is begun the operator should satisfy himself afresh of the existence of the pus. The exploring needle is thereafter left *in situ* to act as a guide, upon which the more complete operation is based. If this principle is followed mistakes will be avoided, and the operation for interlobar empyema will lose much of its difficulty.

HEALTH SERVICES IN MANCHESTER

WIDER POWERS RECOMMENDED FOR M.O.H.

A larger authority for the medical officer of health and the gradual amalgamation of the staffs and resources of the school medical service with the other medical services of the city are the outstanding recommendations in a report by the Ministry of Health on the health services of Manchester which has just been received by the corporation. The Ministry, in pursuance of its duty under the Local Government Act, 1929, is reviewing the health services provided by local authorities. About a year ago those of Manchester were the subject of a comprehensive survey, to which the present report is the sequel. We believe the Minister himself visited Manchester and inquired closely into details. The report falls into two parts: the first dealing with the services already administered by the public health department under the medical officer of health (Dr. R. Veitch Clark) ; and the second, with the services which are administered independently—for example, the school medical service, and the services of water supply, street cleansing, and sewage disposal.

Manchester has a highly developed civic consciousness, and its city council (about which Sir E. D. Simon a few years ago wrote an interesting book) is in many respects a model of local government. The membership of the council (144) is equal to that of the London County Council, which administers the affairs of a population six times the size, and the Public Health Committee, with its ten subcommittees, is a remarkable piece of organization. It is not surprising that the report begins with a warm commendation of the Manchester city authorities on the discharge of their public health functions. Among the enterprises which the Minister notes with appreciation are: the prevention of atmospheric pollution, the interest in cancer research, the promotion of pure milk, and the energetic undertaking of health education and propaganda. The council is also praised for its appropriation to public health services of the hospitals (Crumpsall, Withington, and Booth Hall, with 3,600 beds) transferred under the Local Government Act, together with a convalescent home and an epileptic colony.

MUNICIPAL HOSPITAL SERVICES

Several of the suggestions for improvement made in the report have already been anticipated. Perhaps some of them were made unofficially during the survey, otherwise it might be said, rather unkindly to Whitehall, that what Whitehall thinks to-day Manchester thought yesterday. For example, the Minister states that in view of the volume of work and wide responsibilities now devolving upon the medical officer of health, the council should consider the appointment of a medical officer of senior

rank to assist him at headquarters with the general organization of the hospital services ; but since the survey was made an assistant medical officer has actually been appointed for this special purpose. It is also suggested that the medical and surgical staffs of the municipal hospitals should be strengthened, and this has already been done ; while the advisability of providing additional consultant and specialist services is under consideration. The report mentions the importance "of providing a resident and consultant staff adequate to maintain the clinical work of the hospitals at a proper level, having regard to modern standards of treatment."

Another point already anticipated is the desirability of discussion between representatives of the local authority and of the voluntary hospitals. "Having regard to the status and quality of the voluntary hospitals and their staffs, it appears to the Minister that substantial benefit would ensue if steps were taken to secure such consultation not only on this question"—the development of consultant and specialist services at the council hospitals—"but also on the measures of co-operation best suited to the future development of the municipal and voluntary hospital services of the city." A joint committee, consisting of representatives of the local authority and the voluntary hospitals, has already been considering these matters.

MATERNITY AND CHILD WELFARE

The Minister notes the high standard of the maternity and child welfare services, but suggests that the work of the ante-natal clinics at the municipal hospitals needs to be co-ordinated with the clinics under the maternity and child welfare services (Manchester has one assistant medical officer for maternity and child welfare, and eight full-time and five part-time medical officers at the centres). The Minister urges the institution of post-natal work at these clinics, where maternity patients who had been treated in the wards of the municipal hospitals might attend. Attention is drawn to the comparatively small use made of the obstetric consultant services provided for the assistance of general practitioners. The survey confirmed the need for new accommodation for small-pox patients. The scheme for diphtheria immunization—in which the public health department and the school medical service collaborated—is noted with appreciation. The general arrangements for the treatment of venereal diseases are considered to be suited to the needs of the city, but it is thought that this work in the municipal hospitals should be more closely supervised by a medical officer of seniority and experience on the public health side of the council, so as to ensure the maintenance of a uniform and reasonably high standard of practice and co-operation between the centres.

MERGING OF SCHOOL MEDICAL AND PUBLIC HEALTH SERVICES

A matter of more debate, which may provoke opposition from the Education Committee, is the Minister's recommendation that the school medical services should be co-ordinated with the general medical services of the municipality under the administrative supervision of the medical officer of health. The work of the two services is already co-ordinated in the sense that the two departments work together in matters of common interest, and the school medical officer, Dr. Henry Herd, states in his latest annual report that no opportunity is lost of extending such co-operation. But apparently the Minister has in mind the eventual unification of the services. The report states:

"When the school medical service is separate there is liable to be duplication of clinical premises and clinical services—for example, orthopaedics—with wasteful results and consequent lack of efficiency. Apart from immediate practical issues of this kind, it has been the view of successive Ministers and of Presidents of the Board of Education that only by the closest association of the school medical service with the other medical services of the council will the services as a whole have their full effect in promoting the physical well-being of the population at different ages."

Nearly ten years ago a special committee of the Manchester City Council was appointed to consider such unification, and reported on its general desirability, but the council, while approving the principle, deferred a decision for three years ; at the end of that time no action was taken, and the school medical service continued under a new chief officer as a separate administration. There is already a certain amount of interworking ; the Public Health Committee nominates two members for co-option on the Medical Inspection Subcommittee of the Education Committee, and the medical officer of health can and does attend the meetings of that subcommittee at his discretion. Some such arrangements as these are in existence in most of the large cities, and the opinion in Manchester is that they have worked very well, thanks chiefly to the amity of the chiefs of the two administrations, Dr. Veitch Clark and Dr. Herd ; but, of course, that happy state of affairs cannot be guaranteed in all areas. It is a question of weighing the advantages of co-ordination of all health services against those of co-ordination of all educational services. It will be interesting to see whether the Manchester recommendation is a prelude to a general one for the whole country.

Another direction in which the report suggests that the medical officer's powers should be extended is in connexion with water supply, sewage disposal, and similar services. It is the function of the medical officer to advise the council on those aspects of its services which directly concern the public health, and he should, in the Minister's view, be taken into consultation as a matter of practice by the administering committees, and full opportunity given him for placing before the responsible body his views and the results of his investigations. Apparently an advisory position only is indicated.

The Public Health Committee of the Manchester Corporation has deferred consideration of the report pending a memorandum which is being prepared by Dr. Veitch Clark. It has also appointed a small subcommittee to consider the Minister's proposals for extending the powers of the medical officer.

VITAL STATISTICS FOR ENGLAND AND WALES, 1934

We are indebted to the Registrar-General for the following statement regarding the provisional birth rates and death rates, and the rates of infantile mortality, in England and Wales and in certain parts of the country, during 1934. The statement is issued for the information of medical officers of health.

ENGLAND AND WALES

Birth Rate, Death Rate, and Infantile Mortality for the Year 1934 (Provisional Figures)

	Live Births per 1,000 Population	Deaths per 1,000 Population (Crude Rate)	Deaths under One Year per 1,000 Registered Live Births
England and Wales	14.8	11.8	59
121 county boroughs and great towns, including London	14.7	11.8	63
135 smaller towns with estimated resident populations of from 25,000 to 50,000 at 1931 Census	15.0	11.3	53
London (administrative county)	13.2	11.9	67

The birth and death rates for England and Wales as a whole are calculated on the estimated mid-1934 population, but the remaining rates are calculated on the estimated mid-1933 populations.

The birth rate shows an increase of 0.4 per 1,000 above the low record of 1933, and is noteworthy as being the only increase recorded since 1920, except in 1928, when there was an improvement of 0.1, following an exceptional fall in the previous year.

The crude death rate is 0.5 below that for 1933, and only 0.4 above that for 1930, which is the lowest recorded.

The infant mortality rate is 5 per 1,000 below that for 1933, and is the lowest recorded, the previous lowest being that for 1930 (60).

England and Wales

London (Royal Free Hospital) School of Medicine for Women

The annual dinner of the London (Royal Free Hospital) School of Medicine for Women, which was postponed from December last owing to the death of Lord Riddell, took place at the Savoy Hotel on January 24th, when Mr. G. P. Mudge presided over a company of more than 300 guests. The toast of "The School and the Hospital" was proposed by Dame Louise McIlroy, who said that the two institutions were linked together not only by the terms of the Royal Charter but by still closer bonds of mutual assistance. Students were taught loyalty to the school, loyalty also to other women, and they carried this feeling throughout the whole of their professional career. In the class-rooms they learned about the functions of the body and the brain; in the common rooms, many things about worldly behaviour; and in the hospital they gained not only clinical experience, but learned the sad story of many lives and the discipline of patience and sympathy. The chairman, in responding, referred to the heavy losses sustained during the year by the death of those whose long association and loyal services had earned the affection and esteem of all at Gray's Inn Road. The death of Lord Riddell was fresh in all their minds. The services he had rendered to the hospital were manifold, and his memory would long endure. Another great loss was in the death of Lady Berry; they all recalled with pride the services she had rendered to the school, as also her heroism in Serbia during the war. The chairman also mentioned with regret the resignation, on grounds of health, of Mr. Garratt, who had served the hospital faithfully for nearly a quarter of a century as secretary, and the resignation of Dame Louise McIlroy from the professorship of gynaecology and obstetrics. Dame Louise could be assured that her work was held in much admiration and herself in the sincere affection of all her colleagues. The annual dinner afforded a means of expressing the friendly relations existing between the hospital and the school. The hospital had rendered a great service to the clinical education of women, and it was hard for this generation to realize the difficulties that had been encountered and overcome. Mr. Mudge concluded with a reference to his own happy association with the school since he joined the staff thirty years ago as a lecturer in biology. Dr. Frank Howitt proposed the health of the guests, and mentioned some of them by name. They included Sir Thomas Carey Evans, medical superintendent of the British Post-Graduate Hospital at Hammersmith; Miss Addison Phillips, whose scholastic attainments were well known; Miss Helen Mackay, the first woman to attain the Fellowship of the Royal College of Physicians; Sir Squire Sprigge; and Dr. N. G. Horner. In replying, Sir Thomas Carey Evans said that his place should have been taken by Sir Wilfred Grenfell, who, however, since the dinner was first arranged, had returned to his work among the Eskimos. He went on to refer to women's medical work in India and the connexion of Dame Mary Scharlieb, a name always to be cherished at the hospital, with that work. Twenty medical schools and colleges in India now admitted women students, five of them admitting women students only, and being staffed only by women doctors; a quarter of the medical teaching in India was thus carried out by women. The field was too vast, however, and the work too serious to allow of sex jealousies, and the prevailing spirit was one of co-operation rather than of competition. Miss Addison Phillips, who also responded, said that in no field had the struggle for the recognition of women been better justified than in the medical profession. But medical women wished to be regarded as doctors rather than as women. She commented on the disinterested character of the medical profession, which, in fighting disease and ignorance was, so far as it was successful, eliminating itself, but for their comfort she added that ignorance would outlast their own generation. Miss E. H. Jebens, F.R.C.S., proposed the health of the chairman, and this having been acknowledged the company broke up for dancing. Among those present in addition to the names already mentioned were Lord Justice and Lady Maugham, Lady Barrett, Sir Francis Acland, Sir Frank and Lady Newnes, Professor Winifred Cullis, and the principal members of the medical staff of the hospital.

The Pharmaceutical Society

The annual dinner of the Pharmaceutical Society of Great Britain was held at Grosvenor House on January 23rd. The president, Mr. John Keall, occupied the chair, and some 250 members and guests attended. Lord Blanesburgh, in proposing the health of the society, said that he did so as representing the Lord President of the Privy Council, Mr. Baldwin, who was unable to be present owing to great pressure of work. The society, he said, had justified its existence by the excellence of the work it had done, and, armed with its new charter, was entering upon a period of even greater success and influence. The pharmaceutical profession, like the medical profession, had now become the maker of its own rules and regulations and its own standards of conduct and rectitude, carefully preserving its borders against intrusion, but only because those who inhabited its territory were doing their work well. The president, in reply, said that it was now sixty-six years since the control of the society's affairs was transferred from the Home Office to the Privy Council. At that time the society was twenty-seven years old, and had a membership of 2,000; to-day the membership was 21,000. During those sixty-six years the profession had developed from an almost unorganized group of practitioners into a highly organized self-governing community and an important element in the public health services of the country. In proposing the toast of "Medicine," Mr. Saville Peck, vice-president, spoke of the increasing importance to medicine of the function of the pharmaceutical chemist. The progress of medicine could be recorded in successive *Pharmacopoeias*; the *London Pharmacopoeia* of 1618 was a sort of Mrs. Beeton's cookery book, a compilation of family recipes, and if one compared it with the *British Pharmacopoeia* of 1932 the difference was striking indeed. He concluded with a tribute to the officials of the General Medical Council for assistance rendered the society in connexion with its new Disciplinary Committee. Sir Norman Walker, President of the General Medical Council, who responded, said that the relations between medicine and pharmacy were close: sometimes they had been so close as to generate heat and friction, but now they were intimate and cordial. The trust placed by the public in the individual members of both professions was noteworthy. The individual doctor and the individual pharmacist were appreciated, though collectively as professions perhaps the same appreciation was not accorded. Sir Norman recalled that he began his own professional life in Cumberland, and in the practice he took over it had been the custom from time immemorial for the doctor to dispense his own medicines. Fortunately, he had been well trained in dispensing, though he did not show the same skill in the wrapping up of the bottles! Sir Humphry Rolleston proposed the toast of "The Guests," who included, in addition to those already mentioned, Lord Trent, Sir Gerald Bellhouse, Chairman of the Poisons Board, Professor J. T.

Thorpe, President of the Institute of Chemistry, Professor G. T. Morgan, President of the Chemical Society, Sir William Willcox, Dr. J. S. Fairbairn, and Dr. E. Kaye Le Fleming and Dr. G. C. Anderson, Chairman of Council and Medical Secretary respectively of the British Medical Association. Sir Ernley Blackwell and Sir Henry Dale responded to the toast, the latter remarking that the public associated pharmacists less with conviviality than with mitigation of its after-effects. Sir Henry went on to say that the successive *Pharmacopoeias*, which might now be expected to appear at intervals of ten years, with provision for addenda in between, would increasingly require the services of real experts. Inevitably there would be a shrinkage in the number of old-fashioned remedies which could be compounded in the individual pharmacy and a growing number of remedies of the newer type prepared by complicated scientific processes, and that change would not be confined to the *Pharmacopoeia* alone. Pharmacists would have to decide whether they would retain their proper and proud function as the expert advisers of the medical profession as to the nature and quality of the remedies which medical men applied, or whether, leaving all that to large-scale manufacture and expert academic knowledge, they would allow their profession to sink to the rank of a mere retail trade. The matter must be decided by the society, which could now speak for all the qualified members of the profession.

Manchester University: Recent Progress

A comprehensive account of recent progress in the University of Manchester appeared in the *Manchester Guardian* of January 18th. This begins with a tribute to three University statesmen—Sir Edward Donner, Sir Arthur Schuster, and Sir Horace Lamb—who have died within three months, and the author notes with satisfaction the acceptance of the post of Vice-Chancellor, in succession to Sir Walter Moberly, by Professor J. S. B. Stopford, who has held the chair of anatomy for the past fifteen years. Professor Stopford has taken a leading part in the large developments of the University and in the widening of the range of studies, research, and teaching in the medical school. Twenty-five years ago the students in the University numbered about 860; for the present session the number is over 3,360. Since the war many new departments have been created and new chairs instituted. Mention may be made here of the new departments of social study, cancer research, bacteriology, and (at the Royal Infirmary in conjunction with the University Medical School) the department of clinical investigations and research. Among the new diplomas are those in bacteriology, pathology, psychological medicine, and social study. The number of research students from British and foreign universities has greatly increased since 1918. The John Morley chemical laboratories have been built, and the department of pathology rehoused in the new buildings at York Place. The dental hospital has been taken over by the University, and there are now laboratories for the study of pharmaceutics. In 1914 there were four halls of residence; there are now eight, including Lister House for senior medical students, opened this session.

Central Midwives Board

At the January meeting of the Central Midwives Board for England and Wales permission was given to the medical officer of health for Greenwich and to the clerk to the Public Assistance Committee, Stockport, to train eight pupils per annum instead of six. Approval as lecturer was granted to Dr. Frederick Ross Stansfield, F.R.C.S., Ipswich Nurses' Home. With reference to the resolution passed at the last meeting concerning the approval of military families' hospitals under Rule E.2, the War Office had inquired as to the cases of infection to which the resolution referred, it being contended that influenza and the common cold might be regarded as infectious, but they could not be intended by the Board to come within the meaning of the term "all cases of infection." It was agreed to inform the War Office that the term applied to all conditions which the midwife might transmit directly to her patient, or which she might carry from patient to patient. In addition to the infectious diseases which have to be notified to the local sanitary authority, it would cover such as the following: pemphigus, measles, whooping-cough, mumps, tonsillitis, and acute influenza.

Scotland

Milk and Health

A lecture dealing with the use of milk as a food was delivered under the auspices of the Glasgow Corporation by Dr. Norman C. Wright of the Hannah Dairy Research Institute on January 22nd. Dr. Wright said that even on the basis of its caloric value milk was a relatively cheap food, but any material increase in the consumption in working-class households could not be expected unless there was a fall in its retail price. There was, however, an urgent need for milk for two sections of the community—children and mothers. So far as children were concerned the Government, in co-operation with the Milk Marketing Board, had established a scheme for providing cheap milk to school children, and this was already producing striking results. In England, where the scheme came into operation last October, over 50,000,000 bottles of milk were supplied in a single month. In Scotland the inauguration of the scheme had been delayed, but already 200,000 bottles were being supplied daily, and the inclusion of the Glasgow schools would raise this quantity to 350,000 bottles per day. A drawback of the scheme was, however, that unless local authorities agreed to provide free milk for all those unable to afford it, the supply would be denied to those children who stood in greatest need of it. With regard to the safety of milk, Dr. Wright said that the quality of the milk supply must be such as to give complete confidence to the consumer, and this in turn must involve the provision of a standard of safety which would command the support of the medical profession. It was entirely misleading to say, as it was sometimes, that lack of milk was responsible for more ill-health than the drinking of infected milk. Milk-borne disease, however, could be prevented by the exercise of certain simple precautions.

Glasgow School Medical Service

The report on the medical inspection and treatment of school children for the year ended July 31st, 1934, by Dr. George Arbuckle Brown, has been issued by the Public Health Department of the Corporation of Glasgow. In his preface Dr. A. S. M. Macgregor, the medical officer of health for the city, points out that these reports have furnished over the past twenty-five years records of a kind not available for any other group of the population, and that they show a very considerable improvement, more particularly in recent years, in the general physical condition of school children, and a reduction in the volume and severity of certain ailments. He also notes that the relationship of nutrition to education being recognized, there is no doubt that both health and education would benefit by the introduction of a scheme for providing a milk ration in schools. The good will and co-operation of the officials and the teachers of the education department had been of the greatest possible value in the work, and these are gratefully acknowledged. Dr. Brown's

introduction to the report notes that in spite of adverse conditions no evidence of general impairment of nutrition has been detected in the school population ; in point of fact, the percentage of children with " bad " nutrition was the lowest recorded during the past fifteen years. Again, taking the heights and weights of the children as a criterion of their physical condition, the figures for the year were in strict accord with the steady and progressive increase observed for years past. The percentage of children found to be suffering from rickets was the lowest recorded since 1919, and although the number of children treated in the school clinics reached a total which has seldom been exceeded, in many sections of the work there was ample evidence of positive improvement in the health of the children. The report contains information regarding the staff employed, the organization and administration of the system, the sanitary condition of the schools, the co-ordination of the work with (*a*) that of the divisional medical officers in the matter of infectious disease and contacts therewith, (*b*) with the hospitals for infectious disease and other hospitals, and (*c*) with various centralized clinics. Information is also given as to the feeding and clothing of necessitous children, the children admitted to special and holiday schools, etc. Statistics of the results of medical inspection are tabulated, and throughout the report, with only one or two minor exceptions, these results are as good as or better than any since 1919.

St. Andrews University

The Senatus Academicus of the University of St. Andrews at its last meeting decided to record a minute of congratulation to Professor D'Arcy Thompson upon the attainment of his fiftieth year of service in the University. The chair of biology was instituted in 1884, and Professor D'Arcy Thompson was its first occupant, being appointed on December 19th of that year. He had previously been demonstrator in physiology under Michael Foster at Cambridge. The chair of biology four years after his appointment became the chair of natural history, when Dundee College was recognized as part of the University of St. Andrews. Elected a Fellow of the Royal Society in 1916, he has held many important offices, such as being a member of the Fishery Board since 1898. His publications have been numerous, and are of considerable importance, from both the scientific and the practical point of view.

The death has been announced of Emeritus Professor Robert Alexander Robertson, who retired from the chair of botany at St. Andrews last year, and who has died at Allestree, near Derby. Professor Robertson built up and organized the botany department at St. Andrews, and, as lecturer, reader, and finally professor, served in it for forty-four years. He had originally studied under Sir Isaac Bayley Balfour at Edinburgh, where he graduated M.A., B.Sc. His association with St. Andrews University began in 1889, when he gave a short course of lectures in botany. Appointed lecturer in 1891 and reader in 1915, he was the first occupant of the chair of botany when it was instituted in 1929, taking charge of the botanical departments in Dundee and St. Andrews.

Aberdeen Post-Graduate Course

The Aberdeen Medical School has arranged a course of post-graduate study at the Aberdeen Royal Infirmary and the Royal Aberdeen Hospital for Sick Children, on Tuesdays and Thursdays, at 3.15 p.m., from April 23rd to June 20th, both dates inclusive. In order to enable practitioners, if possible, to attend the complete course of instruction, the lectures and demonstrations given on Tuesdays will be repeated on Thursdays. The fee for the course will be £3 3s. Those desiring to take part in it should notify Mr. H. J. Butchart, secretary of the University, Aberdeen, not later than April 17th.

Reports of Societies

DIAGNOSIS OF DISEASES OF THE STOMACH

At a meeting of the Section of Medicine of the Royal Society of Medicine on January 22nd, with Dr. MORLEY FLETCHER in the chair, a discussion was held on the diagnosis of diseases of the stomach.

Dr. T. IZOD BENNETT opened with three axioms: (1) provisional diagnosis in disease of the stomach was usually derived from careful analysis of symptoms without the support of demonstrable physical signs ; (2) in nearly every case of organic disease absolute diagnosis could only be reached after certain special examinations ; and (3) very serious disease often occurred without causing sufficient symptoms or signs to attract the attention either of the patient or of his medical attendant. Successful diagnosis in gastric disease must depend, first, on careful analysis of the history ; secondly, on general physical examination ; and, thirdly, on such special methods of examination as radiology, gastric analysis, and so forth. Duration of symptoms, whether continuous or periodic, was important, but history alone could never be sufficient. Sensibility in the stomach was of very low grade ; the stomach was a silent organ. Vomiting usually depended on some circumstance far removed from the stomach itself. Physical examination, again, though it should be thorough, was a very ineffective way of reaching exact diagnosis. In many cases he had found that careful and repeated inspection of the abdomen would yield more evidence than the most careful palpation or other form of physical examination. Palpation sometimes revealed an obvious tumour, but more often than not an element of doubt was left in the mind of the observer which could only be removed by the use of accessory means. With regard to special examinations, the time had come to throw overboard the dictum that *x* rays should merely be used to check findings obtained by clinical examination. The physician who ventured on diagnosis of disease of the stomach without *x*-ray examination was performing much less than his duty. With regard to laboratory examinations, gastric analysis was undoubtedly of very great value, but a word of warning should be uttered against the practice of trying to base a diagnosis on the shape of a curve obtained by gastric analysis. The value of such analysis had undoubtedly been enhanced by the use of histamine, but the use of histamine alone must always be rather an artificial procedure ; any sort of fixed meal gave a better picture of the physiological response.

The problem might be approached by suggesting that for practical purposes there were really only three diseases of the stomach—namely, peptic ulcer, cancer, and gastritis. The discovery of a large gastric ulcer with a history of less than a year nearly always meant malignancy. The probabilities were also in favour of malignancy if the ulcer was characterized by size rather than by depth and *x*-ray examination revealed loss of peristaltic movement in the region. An ulcer on the greater curvature of the stomach was almost invariably malignant, as was a large ulcer with absent hydrochloric acid. Many surgeons maintained that a high proportion of chronic gastric ulcers became malignant, whereas the majority of physicians would say that such a development was very rare. For his own part, he could not think that in anything like the proportion alleged in some quarters simple gastric ulcers with a long history became malignant in course of years. He believed that few physicians could say that they had observed for years a patient with chronic gastric ulcer and had seen it terminate in carcinomatous degeneration. He had never known such a case, and he had never had one demonstrated to him. Concerning cancer of the stomach as a disease *per se*, it gave rise to the most astounding varieties of clinical picture. Gastritis was the most difficult of the organic diseases of the stomach. He could not support the school of thought which laid it down that gastritis was a very common disease, readily diagnosed and cured. He did not think that a diagnosis of

gastritis on the evidence of epigastric discomfort combined with some excess of mucus on gastric analysis was justifiable. He concluded with the prophecy that at some future discussion, perhaps not long ahead, the speakers might be concerned to inquire which endocrine gland was concerned or which sympathetic ganglion was responsible in certain diseases of the stomach which to-day were not recognized as such.

Dr. MAURICE SHAW said that the symptoms of gastric disease were produced by disorders of function, usually motor function. Apart from organic diseases disturbances of function might be produced by reflex nervous impulses arising in other diseased viscera. In other cases no organic disease could be found in any organ, perhaps because diagnostic methods were too crude to reveal it, or because the disturbance followed upon such a factor as unsuitable diet or excess of tobacco, or because the symptoms were the result of a neurosis. If the oesophagus, the cardiac sphincter, and the duodenum were excluded, the functional disturbances of the stomach were those involving the body of the stomach and those involving the pyloric mechanism. The former were largely faults of posture; the latter due to spasm or achalasia of the pyloric sphincter. From the diagnostic point of view the nature of the functional defect was more important than the cause. The steps must be: elimination of intrinsic disease, elimination of disease of other organs, and, finally, a distinction between true neuroses and the "primary" functional disorders. Secretory abnormalities were probably much less important than had been supposed in the past. Recently he had been preferring the alcohol to the gruel test meal. Alcohol was a substance which, clinically at any rate, was quite inert so far as the chemical process of titration was concerned, and was more stimulating to the gastric secretion than the gruel. He associated himself with what Dr. Bennett had said as to the position of *x* rays and other "side-room" investigations, as they used to be called. In gastro-intestinal work radiological examination became of extreme importance.

Dr. M. A. ARAFA of Cairo spoke of the supreme importance of an accurate history and a careful physical examination. Careful palpation was the most important method in local abdominal examination. In cases of suspected functional nervous disturbance this preliminary examination was particularly important before accessory methods were applied to exclude organic disease. Of accessory methods radiology ranked first in gross organic lesions, particularly peptic ulcers and tumours situated in the distal portion of the stomach. Gastroscopy was a valuable adjunct to *x* rays; it helped in the identification of varieties of gastritis and in the detection of gastric erosions, flat ulcers, and lesions situated proximally in the fundus. Gastric analysis, preferably by fractional test with gruel meal—he did not agree with the use of alcohol, which was not a natural food, but rather a strong gastric irritant—was useful in a certain proportion of gastric maladies, especially gastritis, duodenal ulcer, pyloric obstruction, and Addisonian anaemia. Finally, Dr. Arafa showed a cinematograph film to demonstrate flexible tube gastroscopy as practised at the Kasr-el-Aini Hospital. The flexible gastroscope was a safe endoscope devised to obtain a direct view of the stomach. The discomfort to the patient during its passage was no worse than in gastric lavage. The positive results of gastroscopy had great value, though the negative findings went for little. He believed that at no very distant date its use would be considered valuable as an accessory, particularly in conditions which radiology could not at present recognize with certainty. The instrument gave a clear picture of the functions of the pylorus and a sound view of the pathology of the living stomach. The patient was examined on an empty stomach, and the rubber tube, lubricated with jelly, passed after the throat had been anaesthetized with 5 per cent. cocaine. A number of coloured gastroscopic views were also shown to illustrate the common gastric disorders.

Dr. C. K. SIMPSON followed with views of some microscope sections, illustrating the very advanced changes which had taken place in the gastric mucous membrane.

Dr. J. DUNCAN WHITE said that the radiologist was gratified to hear the tributes paid to the value of radiology. It was absolutely essential for a control film to be taken of the abdominal cavity before any opaque medium was administered. He also stressed the desirability, in every case, of adequate examination of the chest. Not a few patients referred with vague symptoms of dyspepsia were found to be suffering from some pulmonary condition. A great part of the value of the opaque meal examination consisted in adequate screening. Twenty to twenty-five minutes was the minimum time which should be allowed for a complete examination of the stomach alone.

THE ASSESSMENT OF NUTRITION

At a meeting of the Section of Epidemiology and State Medicine of the Royal Society of Medicine on January 25th, with Dr. J. D. ROLLESTON in the chair, a discussion was held on methods of assessment of the state of nutrition.

Dr. H. E. MAGEE said that "malnutrition" was a word occurring frequently in medical and non-medical publications, but a knowledge of its meaning appeared to be in inverse ratio to its occurrence. One reason for the present confusion was failure to recognize that the state of nutrition was dynamic, not static, a series of continuous, interrelated, and interdependent changes, a state of flux and not of rest. Malnutrition implied disordered function brought about by faulty diets, and the derangements of function included under the term were as manifold as the physiological effects of deficiency or excess of any one of the twenty or so essential food constituents. Malnutrition due to dietary deficiency he called "primary," and that due to other causes, such as existing disease of circulatory, nervous, respiratory, or endocrine systems, "secondary." The relation between the state of nutrition and the onset of disease had only recently begun to attract the attention of investigators. Except in the case of some diseases of the lower animals, there was little evidence to support the theory that the origin of infectious diseases was traceable mainly or primarily to derangement of nutrition. Until scientific evidence was produced showing a clear connexion between onset of a disease and disturbance of nutrition it was not justifiable to call a disease nutritional. The correct treatment of primary malnutrition was a well-balanced diet, but additional therapeutic measures were needed for malnutrition of secondary origin.

The means of assessing the nutritional state (Dr. Magee continued) were, broadly, twofold: on the one hand, the art, and, on the other, the science of medicine. By the exercise of his knowledge of the art of medicine the experienced physician was able to give a fairly accurate estimate of the state of nutrition of a child, and if it were possible for him to examine very large groups of children throughout the country comparisons could profitably be made between the incidence of malnutrition in different places. But the clinical estimates of nutrition made by the inexperienced physician might be of very little value. So long as reliance was placed on purely clinical judgement, so long would the inconsistency in returns of malnutrition continue, owing to the widely different conceptions of what was normal or abnormal. On the other hand, the science of medicine implied measurement—in this instance the employment of physiological measurements of nutritional function. Dependence on measurements merely of body build might lead to erroneous conclusions as to the state of nutrition. The rate of growth was very important, and a slowing in such rate, in the absence of non-dietetic causes, undoubtedly indicated deficiency of constructive elements in the diet. Accurate determination of the growth rate called for repeated measurements of body physique; isolated, or even yearly, measurements were of little value. While it was important to detect, and then to check by appropriate dietetic measures, a slowing in the growth rate, it was much more important to discover the lowered functional efficiency preceding this structural effect, which, when established, might be irreparable.

To decide whether the nutritional functions of a child were satisfactory or otherwise was very difficult. The only way appeared to be the establishment of satisfactory tests of the functional state of the body. Such tests, by providing objective evidence, would give the medical officer something tangible with which to reinforce or correct his clinical impressions. According to their relations to the nervous system, human functions could be divided into: (1) intellectual activities; (2) voluntary movements; (3) movements carried out just below the plane of consciousness; and (4) functions regulated by the autonomic nervous system. Intellectual assessment belonged more to the school teacher than to the medical officer, but the information obtained from the teacher was often of very great assistance in determining the state of health of the child. Voluntary movements could be assessed by some form of physical efficiency test; at his suggestion several medical officers throughout the country were at present testing the lumbar pulls of school children by means of a special dynamometer. With regard to the proprioceptive reflex, he was having some examinations carried out by means of a modification, which he described, of Romberg's test. He had not yet been able to discover suitable tests for the efficiency of the involuntary functions, but such tests would be of very great value, since these functions were little influenced by the mentality of the individual. There was here a wide field for research. The need was urgent for the establishment of methods enabling scientific evidence to be obtained of functional derangements before organic change set in. This was a task well worthy of the highest endeavour of those engaged in preventive medicine. In addition to the study of function, the condition of the blood should be examined. The only test he knew of which could be conveniently carried out in clinics was the estimation of haemoglobin. Unfortunately, too little was known about the normal variations of haemoglobin in children to appreciate the significance of departures from the normal level as found in adults.

Dr. J. GILBERT WOOLHAM, who showed a number of graphs illustrating physical measurements, said that in addition to anatomical tests functional tests were necessary in assessment; the two kinds of tests were called for because structural development and functional ability were not always in the same ratio throughout life. Although children might improve in appearance, and put on weight, and so on, their functional capacity did not always seem to improve at the same time.

Dr. R. H. SIMPSON said that nutrition had been defined as the assembly of processes which were concerned in the maintenance and repair of the living body as a whole, and it was by considering the living body as a whole that it could be determined whether or not these processes were going on normally. With all their faults, clinical methods of assessment were essentially sound, and in competent hands yielded results which were reasonably comparable. On comparing notes with school doctors he had been struck by the general uniformity of their standards. There were, of course, racial and familial peculiarities, for which allowance had to be made, and there were distinct differences which depended upon sex. It was difficult sometimes to avoid paying undue attention to mere bulk, which in itself was not necessarily meritorious. He stressed the importance of the general appearance as an index of well-being. Ordinary methods of measurement, height, and weight he had found to be misleading, and preferred to leave them out of account altogether. He thought the opinion of a sound physician was still the best guide available to the state of nutrition, and a better or simpler substitute for it had still to be found.

Dr. J. C. SPENCE said that that most ill-defined word "malnutrition" had led, particularly of recent years, to a great deal of confusion. Some definition of malnutrition was very necessary, and therefore Dr. Magee's statement that malnutrition was that condition which followed very imperfect or faulty diet did help the matter forward. He would suggest that anyone faced with such problems required a threefold equipment. In the first place, he should have some standards of the desirable and attainable level of health and physique for the age and sex of the person under examination. Were there standards of normal health available in England? There were certainly averages, but he was inclined to call them debased averages—debased because they never knew whether they could not, by taking thought, add a cubit to the stature. Some better standards of anatomical development as revealed by *x*-ray examination were badly wanted. The second piece of equipment was a knowledge of clinical medicine which would enable the examiner to say that the fault, if he had discovered it to be there, was nutritional in origin, or due to some other pathological process, such as latent disease. The third item was a knowledge of dietetics—not a difficult subject, nor a subject which deserved a special diploma from any college, but nevertheless a subject the knowledge of which was not widely diffused.

Dr. ROBERT HUTCHISON said that this problem badly needed discussion. There was no matter on which more nonsense was talked in the public press. One of the difficulties was the very fundamental one of definition. He himself thought that the diet factor was far too much exaggerated in the production of malnutrition. A great many malnourished children were malnourished for reasons quite other than dietetic deficiency. Malnutrition was not necessarily a question of defective diet. Failure to distinguish between primary and secondary malnutrition was very common, and a good deal of confusion was also brought about by failure to distinguish between quantitative and qualitative nutrition. A child might be too thin and yet not in any way badly nourished, just as a child might be fat and yet suffer from scurvy. Some method was wanted for assessing not only quantitative alterations in nutrition, but, if possible, qualitative ones. A good deal of confusion also arose from failure to distinguish between physique and nutrition. Dr. Simpson had said truly that bulk was not necessarily meritorious; the same might be said of height. To aim at height as if it were a good thing in itself was quite a mistake, and, anyway, it had nothing to do with nutrition. He believed malnutrition to be an entirely clinical concept. The clinician did know, roughly, when a child was well nourished when he saw it. He could roughly estimate pathological degrees of thinness, and of fatness for that matter. He took into account such things as the lustre of the hair, the brightness of the eyes, the alertness of the movements. Certainly he would much rather trust to such estimations than to the complicated curves and equations shown them by Dr. Woolham.

Dr. J. ALISON GLOVER said that he had had to do a good deal of work of this kind very quickly, and had found the clinical method surprisingly accurate, so far as he could judge. It included the observation of the mucous membrane, the eyes, the complexion, the stance, and the movements of the child. What it was needed to investigate was growth, and that not only in respect of height and weight, but of what might be called "beauty of development." Clinical methods, if carried out by the same observer, who used reasonable common sense and was fond of children—a rather important desideratum, for children were apt to be sulky in the presence of those not fond of them, and sulkiness might lead to an error of assessment—were quite satisfactory. Dr. Glover showed some comparative results obtained at schools attended by children of well-to-do parents and by children of parents on the poverty line.

Dr. F. C. SHRUBSALL, while agreeing that the recognition of malnutrition was strictly clinical, said that the measurement method had been carried out for many years, the measurements being of a kind which could be made rapidly—height, weight, chest girth, and so on—and there was found to be a definite relation between these measurements and clinical observations if considerable numbers were taken.

Dr. LINDSEY BATTEN said that trouble appeared to arise over this word "malnutrition." It might be possible to say, on looking at a child, that it was malnourished, but he did not believe anybody could say by such observation, even when accompanied by a stethoscope, or by weighing and measuring, whether the state was the result of too little food or of any one of half a dozen other causes. He could not see why malnutrition through not getting enough

food was any more "primary," to use Dr. Magee's classification, than malnutrition due to inability to absorb food owing to disease. The true clasification was surely "dietetic" and "non-dietetic."

Dr. MAGEE, in reply, said that when he had spoken of primary malnutrition he had meant precisely what the last speaker intended by "dietetic malnutrition." He agreed that the final assessment must be made by the physician, but as a scientist he wanted objective evidence. Until objective evidence was forthcoming the clinician would find it extremely difficult to impress his conclusions upon other people—scientists, politicians, or whomsoever they might be.

HORMONES IN MEDICINE AND PATHOLOGY

At the joint meeting of the Manchester Medical and Pathological Societies held on January 9th, with Dr. E. B. LEECH, president of the Medical Society, in the chair, Professor E. C. DODDS gave an address on "The Hormones and their Relationship to Medicine and Pathology."

Professor Dodds opened with a brief historical review of how the general principles of the hormones of the ductless glands were discovered. It was pointed out that castration was really the first endocrine experiment, although it was not recognized as such. The thyroid was the first organ of internal secretion to be investigated, through the work of Gull, Ord, and Murray. The term "internal secretion" was not used until 1895, when the work of Oliver and Schaefer put the whole question of the ductless glands on a firmer basis. Their work explained the role of the pancreas in diabetes, and gave fresh significance to the observations of Von Mering and Minkowski in 1889. With regard to clinical application, success was first obtained with the thyroid gland, and one of the reasons for this success was undoubtedly the stability of the hormone, just as failure with the pancreas was partly due to the fact that the hormone was readily destroyed by digestive ferments. Recent work on sex hormones was then reviewed. The earlier work of Allen and Doisy, together with the isolation by Aschheim and Zondek of oestrin in the urine of pregnancy, was mentioned, leading on to the crystallization of the hormone by Doisy and Butenandt. A brief review was given of sterol chemistry, and the formulae of some typical sterols were exhibited. The chemical constitution of oestrin was discussed, and its similarity to the sterols pointed out. It was shown that by modifying double bonds and polar groups of the molecule various types of pharmacological activity could be obtained. The relation between certain synthetic oestrus-producing substances and derivatives of phenanthrene and dibenzanthracene was discussed, together with the relation of carcinogenic hydrocarbons to the sterol group and to oestrogenic agents. It was pointed out that by modifying the molecule in certain important details it was possible to obtain entirely different biological activities—that is, oestrus production, comb-growth in the capon, production of malignant disease, and the antirachitic effects of vitamin D. The male sex hormone was then considered and the important observations of Ruzicka discussed. It was explained how this worker had succeeded in producing a synthetic hormone by oxidizing the side-chain of the inert sterol epi-dihydroxy-cholesteryl acetate. Finally, the corpus luteum hormone had been prepared from the inactive stignansterol and from pregnandiol. This completed the laboratory survey, and the clinical applications of the sex hormones were then considered. Professor Dodds described the work of Kaufmann, who employed large doses of oestrin and corpus luteum hormone, and stated that it was possible by this means to produce menstruation at any time with unfailing regularity. Thyroxine was briefly discussed as the final outcome of the pioneer work of Murray, who was the first to show that myxoedema could be cured by injections of the thyroid gland. The apparent similarity of dinitro-*o*-cresol in raising the metabolism was observed, but it had no action upon myxoedema. In conclusion, the speaker gave a very brief outline of recent work, showing a connexion between the posterior lobe of the pituitary and the stomach. It was at present too early to discuss the significance of these observations.

AFTER-RESULTS OF NEPHRECTOMY

At a pathological meeting of the Liverpool Medical Institution held on January 17th, with the president, Dr. J. MURRAY BLIGH, in the chair, Dr. HOWARD G. HANLEY read a paper on "A Pathological Investigation into the After-results of Nephrectomy."

Dr. Hanley said that knowledge of the sequelae of nephrectomy was practically limited to work done on the experimental animal, so the object of his inquiry was to investigate fully the after-results of nephrectomy in human beings, collecting the cases from as many different sources as possible and subjecting them all to the same routine examination. The patients were investigated by means of a blood urea and non-protein nitrogen estimation, Maclean's urea concentration test, and the van Slyke clearance test. The latter test was described in detail theoretically and clinically. One hundred and one cases of nephrectomy within the last six years were followed up. Of these thirty-four had died, giving a mortality of 33.3 per cent. The initial mortality—that is, death before leaving hospital—was 17.8 per cent., while the mortality within twelve months rose to 28.7 per cent. The initial mortality of the pyonephrosis group was the highest, 27.5 per cent., while the hydronephrosis group was the lowest, at 13.3 per cent. Nephrectomy for hydronephrosis, calculi, and tuberculosis offered the best prognosis, with a total mortality of 20 per cent., 22 per cent., and 23 per cent. respectively. One group consisted of five cases of nephrectomy for ? tuberculosis or haematuria, but on subsequent section of the organ chronic nephritis only was found. The mortality in this group after nine months was 100 per cent. With regard to the renal function of the living patients, their total average van Slyke clearance value was 70.7 per cent.—that is, just below the normal 75 to 120 per cent. range. The conclusions drawn from this were: (1) that human patients with only one kidney, probably because their original pathology was not unilateral, did not possess a normal renal reserve; and (2) one had in the van Slyke test a means of showing a loss of 50 per cent. functioning renal tissue, which was more than the urea concentration test, blood urea, and N.P.N. estimation would do. In the whole series only ten cases had an N.P.N. over 40 mg. per cent., only five cases being over 50 mg. per cent. The superiority of the van Slyke clearance test over the other routine tests was demonstrated by a series of cases depicting blood urea clearance, urea concentration, and blood urea and N.P.N. estimations before and after operation for nephrectomy.

Dr. R. W. BROOKFIELD said that Dr. Hanley had done a useful service in drawing attention to the inadequacy in many cases of the non-protein nitrogen value of the blood as an index of renal function. The speaker had recently had under observation a young adult suffering from chronic azotaemic nephritis with symptoms of uraemia in whom the N.P.N. figure was only 40 mg. per cent. Van Slyke's test gave, however, a percentage clearance of 15, and a closely similar figure was obtained when the test was repeated, using Fowweather's modification. Following the ingestion of the urea the N.P.N. value rose markedly, and remained in the region of 100 mg. per cent. for several days. Dr. Hanley's figures for the results of nephrectomy for so-called essential haematuria were illuminating, and the fact that all his patients were dead within a year suggested that surgical measures should be adopted only with reluctance.

Dr. E. T. BAKER-BATES said that Dr. Hanley's paper was important to the clinician because it had drawn attention to the large immediate and remote mortality of nephrectomy, to the value and limitations of the urea clearance test, and to unusual manifestations of chronic nephritis—namely, frank haematuria. In surgery the estimation of renal efficiency was a relatively simple problem; usually no diagnosis was required, it being

sufficient to state whether or not the excretory powers of the kidneys were adequate to allow removal of the diseased kidney, or, in prostatic obstruction, whether a one- or two-stage operation was indicated. In medicine renal function tests were disappointing ; in the gross cases a purely clinical examination would often demonstrate renal insufficiency from the amount of cardiovascular changes and a routine examination of the urine, including deposit. The youth with albuminuria as the only evidence of renal involvement and a previous history of nephritis was the most difficult problem, renal function tests usually being of no value. Blood analysis in relation to medical cases was disappointing ; the amount of nitrogen retention seemed to bear no relation to the extent of renal damage, obstruction of urinary flow producing much greater nitrogen retention than kidney lesions. Fishberg had divided renal function failure into two stages: the first stage, in which there was loss of concentrating power (renal hypofunction) ; and the second stage, where there was accumulation of excretory products in the blood (renal insufficiency). It followed, therefore, that different renal function tests would be required to detect these stages. The urea clearance test of van Slyke, especially as modified by Fowweather and combined with the urea concentration test of Maclean and de Wesselow, was far more sensitive than any other test at present in use. The combined urea clearance and concentration test had the value of demonstrating the extrarenal factors (heart, circulation, and dehydration, together with alimentary factors) which could modify the results of other renal function tests. To be of value renal function tests must be repeated and compared at intervals, as an isolated observation only demonstrated the state of the kidney function at that time, and gave no index of the prognosis or of the presence or absence of permanent damage. A close liaison must be maintained between the physician and surgeon if the high present mortality in nephrectomy was to be reduced.

Professor HENRY COHEN ascribed certain cases of "essential haematuria" to the painless infarcts of advancing renal arteriosclerosis. He discussed the effects of limited protein intake on the urea content of plasma, and instanced a case of huge bilateral renal calculi, forming casts of the calices, which had been present for over twelve years without appreciable deterioration in the physical state of the patient or in his renal efficiency, despite an average consumption of two bottles of liqueur brandy daily for over ten years.

Mr. JOHN T. MORRISON said that he was somewhat taken aback by the heavy post-operative mortality, and had been seeking to account for it. In cases of pyonephrosis the technical difficulties were often enormous, and perhaps it was not surprising that many of these patients succumbed. The blame for this should be laid, however, upon the fact that such patients came so late for operation—sometimes after years of treatment. The same applied to calculus cases. He could see no reason, however, for the mortality quoted by Dr. Hanley in cases of hydronephrosis, and thought this figure should be much lower. Where one was dealing not with a primary condition but with a focal lesion in a patient suffering from tuberculosis, he considered that the 7 per cent. mortality recorded was not altogether unexpected. Mr. Morrison thought that surgeons would find these figures most valuable, and that these would stimulate them to further investigation with a view to dealing with the underlying causes.

G. Barbèra (*Il Policlinico*, Sez. Prat., December 17th, 1934, p. 1965) tested the principal functions of the liver in 168 cases of pulmonary tuberculosis by clinical methods (for hepatomegaly, tenderness of the organ, and diarrhoea) by chemical tests (for urobilin, acetone, and diacetic acid), by haematological examination (glycaemia, Widal's haemoclasic reaction), and by the laevulosuria and galactosuria tests. He came to the conclusion that in severe and protracted forms of pulmonary tuberculosis there is always more or less considerable damage to the parenchyma of the liver, which may or may not be reparable, according to the severity of the attack.

CORRESPONDENCE

Chest Hospitals and Clinics

SIR,—Dr. F. Heaf's communication, published in your issue of January 5th (p. 8), has raised several questions of considerable interest and of no little importance. As a physician concerned with the instruction of students, both undergraduate and post-graduate, in diseases of the chest, I am especially interested in his suggestions for the establishment of "chest hospitals and clinics," since these appear to me to form the basis of a much-needed reform of the medical curriculum.

Over two years ago I drew attention in the correspondence columns of the *Lancet* (1932, i, 954) to the lack of adequate co-operation between the medical schools and the municipal authorities, with special reference to the annual expenditure by the local authorities on tuberculosis work of an amount which, according to the reports of the Ministry of Health, exceeded three and a quarter millions. Dr. Heaf's article has provided an admirable opportunity for further ventilation of the question of the training of students in diseases of the chest. With his view that the tuberculosis dispensary should be converted into a chest clinic for the diagnosis and treatment of all chronic respiratory disorders I am in agreement. While, however, he has emphasized this mainly from the point of view of the advantage to the patient and to the community, I am more concerned to lay stress on its importance as an integral part of any future scheme for the improvement of medical education.

Many of those who are familiar with the working of the tuberculosis dispensaries are well aware that of all the cases sent to these institutions for investigation at least half, if not more, are not suffering from pulmonary tuberculosis. For those definitely classified as non-tuberculous no further responsibility rests with the dispensary. Of the remainder many are kept indefinitely under observation, suffering all the social ostracism of the tuberculous suspect, while others spend their lives in and out of sanatoria, having never had phthisis, though often enough they are the victims of some other serious chronic respiratory disease. The complaint of undergraduate students of the lack of opportunity for examining a sufficient number of chest cases is notorious, and even the supply of material in the two great chest hospitals of London represents but a very small proportion of the available total, most of which is absorbed by the dispensaries, which are obviously responsible for the present state of affairs.

I cannot but think that the remedy which Dr. Heaf has suggested is one which should afford food for reflection by the various examining bodies, and especially by the Royal Colleges. The opportunity for study which exists in the vast machinery of the municipal medical services is almost unlimited, and it is not to be supposed that local authorities all over the country would fail to give support to the scheme which Dr. Heaf has so clearly adumbrated, if only those who are primarily responsible for the training alike of general practitioner and specialist would give the lead by voicing in no uncertain terms the demand for such necessary reform.—I am, etc.,

London, W.1, Jan. 21st. MAURICE DAVIDSON.

Maternal Mortality

SIR,—If one writes a letter to the Press and anonymously, if it is of great importance or interest, ten to one (and I should like to be the backer) the name of the writer becomes known to a certain number of people, and so it gets spread abroad. This is not the fault of the editor, who is always the soul of discretion (I am

one myself), but the name becomes known somehow. I believe it is this, and this only, which prevents many recognized authorities in my department of medicine from stating, in cold print, that which their great experience leads them to believe is the fundamental cause of the present high maternal mortality and morbidity.

I have every reason to know that it is most dangerous to express one's opinion on such a matter openly and honestly. When at the Portsmouth Meeting of the British Medical Association I delivered an address on "The Use and Abuse of the Obstetric Forceps" I hoped to be of some use to the profession. At any rate, as a counterblast to this pious opinion the address resulted in the abuse of myself. I received dozens of letters from practitioners all over the country in such terms that I should blush to repeat them in your columns. So much so, indeed, that the then Editor kindly came to my rescue in a leading article. Moreover, my banking account suffered seriously for quite a long time. This was a warning which I know deeply impressed many of my colleagues and friends. I understand that Professor Gilbert Strachan's letter in last week's *Journal* has not met with the reception which he might naturally have anticipated.

There is no doubt that in due course there will be a State Maternity Service, and this may be sprung on the profession before it has had time adequately to consider such a proposition. I suggest that it would be of the greatest value if our leading authorities in obstetrics, and the intelligent doctors engaged in family practice, would give your readers, anonymously, the benefit of their ideas as to the fundamental cause of the high maternal mortality. Their anonymity could be safeguarded if you, Sir, would state your willingness to receive such letters, with the name of the writer in a sealed envelope, which you yourself would destroy.

I am persuaded to send you this letter because of certain vigorous criticisms which have been passed on my address at the opening of the extension to the Willesden Maternity Hospital, in which address I maintained, more particularly, that the present high mortality rate was partly due to two factors: that of the women themselves and that of abortions. I based this assumption, so far as the value of ante-natal treatment was concerned, on the statements of three great authorities. (1) On that of Sir George Newman, who has stated that up to the end of 1933, 57.8 per cent. of pregnant women with no private medical attendant had failed to take any advantage whatever of the services of the ante-natal clinics, which, at the end of 1934, numbered for England and Wales, Scotland, and Northern Ireland, 3,646. (2) On that of the Interim Report of the Departmental Committee on Maternal Mortality and Morbidity, which states: "Half the deaths which have come under our review might have been prevented had due forethought been exercised by the expectant mother and her attendant, if a reasonable degree of skill had been brought to bear on the management of the case, and adequate facilities for treatment had been provided and utilized." (3) On that of the Registrar-General, since if a list of those diseases and complications, which can in very many cases be successfully treated ante-natally, be extracted from the text of his reports, a mortality rate of 1.41 per 1,000 births will be shown.

With respect to the question of abortion, which, I find on an average of ten years, accounts for 12 per cent. of the total maternal death rate, I believe that the number of such deaths could be materially reduced by making abortion registrable. If the British College of Obstetrics and Gynaecology or the British Medical Association would "get busy" and obtain an Act of Parliament making registration imperative, I feel confident that such an Act would be of the greatest value to the community. The question of the registration of therapeutic abortion is, at present, such dangerous ground to tread upon that it would be better, perhaps, to leave this out of account. At any rate, Act or no Act, deaths due to abortion should not be added to those due to puerperal sepsis at term, as now they are by the public, although the Registrar-General does append a note thereon.

It is more particularly with respect to the value of ante-natal care and treatment on which there appears to be such a striking difference of opinion. I have lately had the opportunity of discussing this subject with some of our leading obstetricians, and they poured scorn on my idea of the personal factor. I am assured, most emphatically, that the failure to attend ante-natal centres has but little, or nothing, to do with the present high mortality and morbidity rate; that eclampsia, for instance, is just as common as it always has been (can you believe it?), but that this high rate is due to the *mismanagement of labour*. This is a new idea to me, and leads to an uncomfortable conclusion. It is known that the results obtained by midwives are better than those obtained otherwise, obviously due to the fact that doctors have to treat all complications and emergencies. In other words, it must be that these emphatic gentlemen, with whom I have discussed the subject, are assured that the present high mortality and morbidity is due to the general practitioner. I venture to assert that this is a libel.

Therefore, I say, let us have in chapter and verse the candid opinions of our leading obstetricians and others in your paper for the next few weeks, and these, for the reason I have given, anonymously if they so desire. It cannot be denied that such expressions of opinion would be of the greatest service to those whose duty it will be to draft the Bill for a State Maternity Service. Let there be no "sitting on the fence." I have noticed that those who thus recline are but of scant use to our profession, so far as leaving, by their efforts, the science of medicine a little better than they found it, although I admit that they have not reduced their incomes by assuming such a comfortable position or, for the matter of that, their professional standing.—I am, etc.,

London, W.1, Jan. 27th. COMYNS BERKELEY.

*** It is not through leakage in editorial offices that the identity of anonymous correspondents becomes known outside. There are correspondents whose style and point of view are so familiar that no pseudonym can hide the authorship of what they write. There are others who tell a friend who tells a friend—in strict confidence. If any readers wish to act on Sir Comyns Berkeley's suggestion we will safeguard their anonymity so far as lies in our power, but we shall open the sealed envelopes before destroying their contents, and we cannot give any promise about publication of such letters.—ED., *B.M.J.*

SIR,—The letter from Professor Gilbert Strachan, which appears in your issue of January 26th, is apparently intended to reassure your readers with regard to the question of maternal mortality by claiming that there has been no rise in the maternal death rate in recent years, and that there has actually been a fall in the last forty years from 5.5 to 4.1 per 1,000 births. On these grounds he concludes that recent public anxiety about the matter is misguided and is due to political agitation.

The facts, as stated in the Annual Report of the Chief Medical Officer of the Ministry of Health for the year 1933,

do not, however, appear to justify Professor Strachan's optimism, but rather give grounds for serious alarm. The figures there set out (p. 63) show that the slow but steady fall in the maternal death rates which continued, with some interruptions, until 1924, was then arrested, and that a rise of about 20 per cent. has occurred in the last nine years. In Professor Strachan's own area, Glamorgan, the rise in this period is as great as 36.11 per cent., as shown below.

ENGLAND AND WALES

Puerperal Mortality per 1,000 Live Births

1913	*1923*	*1933*	
3.96	3.82	4.51	= Rise in last ten years, 18 per cent.

Total Maternal Mortality per 1,000 Live Births

1913	*1923*	*1933*	
4.87	4.83	5.94	= Rise in last ten years, 22 per cent.

GLAMORGAN[1]

Puerperal Mortality per 1,000 Live Births

Average for 1911–24	*1924*	*1933*	
5.67	5.04	6.86	= Rise in last nine years, 36.11 per cent.

Figures showing the total maternal mortality in Glamorgan are not available.

In certain districts within twenty-five miles of Cardiff maternal death rates of over 9 per 1,000 have been reached in recent years, and the rates for the industrial areas of Wales thus compare unfavourably with those of all other civilized countries, not excluding America.

Professor Strachan claims that these deaths are unpreventable, and criticizes the Report of the Maternal Mortality Committee for its claim that 50 per cent. could be avoided. The findings of the New York Academy of Medicine with regard to deaths in the State of New York[2] go beyond the English committee's estimate of 50 per cent., and claim that 65.8 per cent. of the deaths could be prevented.

These findings appear to be borne out by the fact that in many towns and districts in England, not to mention the whole of Holland, such deaths *are* prevented year after year. The low rates of many maternity hospitals, and of the nurse-midwives working for nursing associations affiliated to the Queen's Institute of District Nursing, are quoted in the Chief Medical Officer's Report (page 263), and shown to be under 2 per 1,000 in over 600,000 cases. The death rates of some large cities such as London (3.55) and Liverpool (3.41), and of many county areas, are consistently low.

In connexion with Professor Strachan's statement that the activities of the National Birthday Trust Fund in financing research in anaesthetics suitable for use in midwifery will result in an increase in the number of deaths, it is of interest to note that London and Liverpool have been foremost in providing anaesthetic relief to the patients in their maternity hospitals, and that the death rate in London has dropped from 3.8 to 3.55 since the widespread adoption of anaesthetics in both voluntary and county council hospitals in 1931. In Glamorgan, on the other hand, any form of anaesthesia is rare, except at the Cardiff Royal Infirmary, to which the National Birthday Trust Fund has supplied free, on request, 7,752 chloroform capsules since July, 1932, for the use of patients of Professor Strachan and his staff.—I am, etc.,

JULIET WILLIAMS,
Member of the Executive Committee,
National Birthday Trust Fund.

London, Jan. 27th.

[1] See Report on High Maternal Mortality in Certain Areas (p. 71), and the Official Health Report for 1933.

[2] See Report of the Public Relations Committee of the New York Academy of Medicine on Maternal Mortality in New York City (p. 32).

Anaesthesia in Relation to Maternal Mortality

SIR,—In the *British Medical Journal* of January 26th the professor of obstetrics of the Welsh School of Medicine refers to the work of the National Birthday Trust Fund to provide anaesthetic relief for poorer mothers, which the professor considers is likely to increase the maternal mortality. Recent work, however, has shown that such fear is unfounded.

At the Wellhouse Hospital, Barnet, where gas-and-air analgesia has been in use for the last fifteen months, there has been no increase in instrumental deliveries. In a series of 300 cases, 164 of which were primiparae, forceps delivery was found to be necessary in twenty-six cases. It has been the experience of many observers that women who are relieved of their pain are far less likely to come to forceps delivery than those women who are given no relief. In a recent report issued by the London County Council it was stated that there had been no increase of forceps deliveries as the result of the introduction of anaesthetics into the labour wards of their hospitals. Dame Louise McIlroy and Dr. Rodway, in their very able report on the alleviation of pain in 560 cases of spontaneous labour, find no ill effects from the proper use of sedative drugs and anaesthetics. They say: "We have found the duration, strength, and frequency of the pains increased in over 50 per cent. of cases" (after the use of nitrous oxide and oxygen).

There have been two very informative textbooks published on the subject of anaesthesia in labour, by Dr. Lloyd Williams and Dr. Neon Reynolds respectively. Dr. Lloyd Williams, after having made a very careful study of the whole matter, considers that labour is not prolonged in cases where gas and oxygen or gas and air is used (p. 37), and Dr. Neon Reynolds in his book states (p. 110) that in his experience "there is no prolongation of labour and no ill effects upon the mother or child, and no tendency to increased haemorrhage or suchlike complication," again after the use of gas and oxygen.

I quote only a few of the recognized authorities (and what has been said of gas and oxygen applies to gas-and-air analgesia), but there is very ample evidence at the disposal of the professor of obstetrics of the Welsh School of Medicine to show that he is unduly pessimistic in his assumption that the work of the National Birthday Trust Fund is likely to increase our maternal mortality. The maternal mortality in Holland, "where anaesthesia is insistently demanded," the professor tells us, is 2.6 per 1,000. It does appear to me, therefore, that the National Birthday Trust should have the whole-hearted support of our profession.—I am, etc.,

JOHN ELAM.

Barnet, Jan. 26th.

Training in Midwifery

SIR,—Nearly every day we see correspondence and articles in the papers concerning maternal mortality, and it is suggested, with some truth, that medical students are not given sufficient practical experience in midwifery before going into practice. I do not think it has been sufficiently emphasized that the difficulty of giving students experience is very largely due to the number of nurses who are taking the C.M.B. examination.

It is well known that there are 56,000 women on the midwives roll, and of these only about 15,400 are in practice, according to the returns made by local supervising authorities to the Central Midwives Board. The majority of those who hold the C.M.B. qualification therefore do not practise midwifery and only take the examination in order that they can put in for a special post, such as matron, sister, etc.

I can think of no way by which to prevent the more ambitious from taking the C.M.B. and of limiting the number of candidates except by creating a whole-time midwives service and thus guaranteeing a proper living wage, pension, etc. Another advantage might arise from such a whole-time service—namely, that the midwives would more readily seek the advice of medical practitioners concerning their patients, whereas at present, in spite of the C.M.B. regulations, it would appear to be rather helpful in their practice to say: "I seldom have to call in a doctor."—I am, etc.,

London, W.1, Jan. 23rd. MALCOLM DONALDSON.

Endoscopic Resection of Prostate

SIR,—May I congratulate Messrs. R. W. Doyle and G. Y. Feggetter on their article concerning this subject in the *British Medical Journal* of January 26th. The value of per-urethral methods of dealing with certain cases of prostatic obstruction is now recognized, but the exact place of endoscopic resection in prostatic surgery has yet to be defined. Hence the wide variation in the proportion of cases suitable for per-urethral treatment found in different clinics, ranging from 10 per cent. up to the 98 per cent. of the Mayo Clinic. It is only by the interchange of experience, and by the publication of such articles, in which conclusions are based not on vague personal impressions, but on carefully sifted statistics, that eventually the true place of resection in the treatment of prostatic obstruction will be found.

With the conclusions reached by Messrs. Doyle and Feggetter I am generally in agreement. Only in the matter of the relative importance of haemorrhage and sepsis as complications of the operation and as potential causes of death does my experience not tally with theirs. In approximately 200 cases of obstruction treated by per-urethral methods I have only once been compelled to open the bladder for clot retention, whereas I have had a dozen deaths that could be attributed to the effect of ascending sepsis on already damaged kidneys. It is probable, however, that this discrepancy between my experience and theirs is in great part explained by the fact that the majority of my operations were performed before the advent of the McCarthy resectoscope by methods that entailed the leaving behind of a mass of coagulated tissue. This, although it might diminish the risk of post-operative haemorrhage, increased enormously the risk of sepsis.

I agree with these writers when they state that if for any reason enucleation is contraindicated in a patient with massive enlargement of the lateral lobes he can be saved from the fate of permanent drainage by resection, carried out "if necessary in two or more stages." It would have been of interest to know in what proportion of their cases Messrs. Doyle and Feggetter were compelled to employ more than one session in order to obtain satisfactory results. A perusal of statistics from various American clinics shows that there is a growing disposition among resectionists to substitute for single massive resections repeated sessions. It is towards the close of an operation on a large prostate that bleeding tends to obscure the view, and that it becomes difficult to know exactly where the loop is being placed. It is at such a time, therefore, that mistakes are more likely to be made. For this reason the majority of experts recommend that no more should be attempted at a single sitting than can be accomplished safely and under full ocular control. If this be the case, may it not be wiser when compelled to tackle by means of resection a large prostate, to obviate the disadvantage of prolonged urethral drainage by combining with the first session the placing in position of a temporary suprapubic tube? Not only does such a measure lessen the risks of clot retention and sepsis, but it provides a way out of the difficulty that may arise if, after one or two sessions, the patient refuses to submit to any more operative procedures.

Finally, a word on the subject of anaesthesia. I agree with the writers that a caudal anaesthetic is excellent, although personally I prefer to inject 20 c.cm. of a 3 per cent. solution of novocain to 30 c.cm. of a 2 per cent. solution. Unfortunately, however, a caudal injection, in my experience, fails to provide satisfactory anaesthesia in some 20 per cent. of cases. So high a percentage of failures makes one hesitate to employ it as a routine, if for no other reason than that a false start to an operation is damaging to a patient's morale.—I am, etc.,

London, W.1, Jan. 26th. KENNETH WALKER.

SIR,—I read with interest, in the *Journal* of January 26th (p. 147), the article by Mr. R. W. Doyle and Mr. G. Y. Feggetter on endoscopic resection of the prostate. A case occurred to me in connexion with the authors' remark that "the result aimed at is the production of a 'gutter' by the removal of the posterior commissure, middle lobe, or bar flush with the trigone of the bladder, and by undercutting the lateral lobes when present." My patient, originally drained suprapubically for retention and renal insufficiency, had such a resection performed; but his wound, in spite of prolonged treatment with an indwelling catheter, never remained closed. During the intervals when it was dry, micturition was always accompanied by back-pressure renal pain. At operation I found that the lateral lobes were practically pedicled. A finger could be passed behind them into the urethra, and they could be lifted forward. It is obvious that a force applied from above, as with vesical contracture, would serve to close them down and shut off the exit.

In my opinion, and without detracting in the least from the value of endoscopic methods, something more than undermining the lateral lobes is required if they are enlarged to any degree.—I am, etc.,

STEPHEN POWER, M.S., F.R.C.S.

London, W.1, Jan. 25th.

Reactions following Gold Injections

SIR,—I have followed with interest the correspondence in your columns with regard to the dangers of gold-salt therapy in rheumatoid arthritis. I agree that it is well to emphasize these from time to time, but there is, on the other hand, some risk of overdoing this to such an extent that this very promising form of treatment may be dropped prematurely. I have heard many medical men say recently that they think that gold should be left to the politicians—an unprogressive attitude, which is being fostered both among medical men and also among laymen, by means of alarming statements published in certain daily papers, based upon the article and correspondence in the *Journal*.

I have now treated a considerable number of cases of rheumatoid arthritis by means of gold injections, in hospital and out. In view of the pharmacological uncertainty surrounding the subject I have always thought it safest to use small dosage. This plan, although it has delayed results, has led to a gratifying freedom from after-effects such as those recently described. During the three years since I have employed gold I can only remember one case which showed intolerance. The case was that of an elderly lady who complained at the onset of a second course of injections of painful and prolonged spasm of the rectum, with considerable tenesmus. This remained unrelieved by treatment for about a week, and then passed off.

I consider that the total amount given in any one course of treatment should never exceed 1 gram, whilst this is best administered in doses of 0.1 gram as the normal maximum at any rate in the aqueous solutions. In the circumstances little in the way of results can be expected in a period of much less than four to six months. The result is, however, in very many cases achieved ultimately, which convinces me that this method is the best for present use. Perhaps the pharmacologists will be able to help us to rationalize this somewhat empirical branch of therapy in the near future—I am, etc.,

London, W.1, Jan. 25th. W. S. C. COPEMAN.

SIR,—The letter from Dr. Geoffrey Holmes has been quoted in the lay press, and has given rise to some difficulty in the treatment of patients with gold.

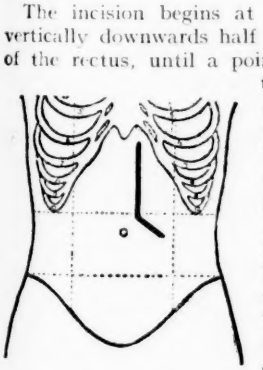
The fact that toxic dermatitis could appear after a full course of injections of gold had been given, without any previous untoward symptoms, has been well recognized, and applies to the other heavy metals, bismuth and arsenic, although in the great majority of cases there have usually been warning signs of itching or short-lived erythematous or eczematous rashes after each injection. I have always considered it an increased risk to give patients over 55 full doses of either gold, bismuth, or arsenic, and it is this point, I think, which particularly needs emphasis.—I am, etc.,

London, W.1, Jan. 28th. L. FORMAN.

Treatment of Ruptured Spleen

SIR,—The discussion on this subject seems now to have narrowed down to a controversy as to whether the mid-line or the transverse incision gives the better access. There is, however, a third approach, which combines their virtues without their drawbacks, and is so much superior to them that I fully expect it to become the standard incision not only for the surgery of the spleen, but also on the right side for work on the gall-bladder, bile ducts, and duodenum. Since reading a description of it in the *Journal of the American Medical Association* of October, 1933, I have used it for all such operations and have found it most satisfactory. It is carried out as follows:

The incision begins at the costal margin and is brought vertically downwards half an inch lateral to the inner border of the rectus, until a point is reached about an inch above the umbilicus. The incision then curves outwards and slightly downwards across the rectus. The anterior leaf of the rectus sheath is then opened in the same line as the skin incision curving across the muscle in the lower part. The muscle itself is not cut, but it is now loosened from the posterior part of the sheath and retracted outwards. This is usually quite easy, and at the lower part a surprising amount of mobility is obtainable, so that when the next step is taken of dividing the posterior sheath and peritoneum together, the rectus can be retracted until it lies almost parallel to the costal margin. A clear view is now obtainable of the whole area. On the right side the gall-bladder and ducts come right into the centre of the picture and offer perfectly easy access, so that operation on these parts is greatly simplified.



I have found no difficulty in closing the incision, but the lower portion of each layer should be sutured before the vertical part. There is usually very little bleeding, and no nerves are interfered with. The rectus slips back into its bed, and lies between the anterior and posterior incisions in the aponeuroses, so that a strong cicatrix results. If drainage is required it is made through a stab outside the line of the wound.

I am quite sure that any surgeon who tries this method will at once be convinced of its usefulness.—I am, etc.,

Torquay, Jan. 14th ROBERT G. RIDDELL.

A New Syndrome?

SIR,—I was interested to read Dr. Matson's letter in the *Journal* of January 19th (p. 130). My partners and I, during the autumn and early winter months of 1934, met several exactly similar cases. Several throat swabs yielded a pure culture of haemolytic streptococcus. During this period there were many isolated cases of true scarlet fever, of which the infecting source was never located. The children involved developed otitis media in several instances, and had nasal and buccal sores; while many adults who had the same syndrome developed post-tonsillar abscess. There was no peeling observed in any of the "syndrome" cases.—I am, etc.,

Kent, Jan. 23rd. J. DOWLING, M.B.

Qualification for Practice: Licences and Degrees

SIR,—I am perplexed by the repercussions which my letter to you of November 24th, 1934, has evoked. You, Sir, seem to think that it raised "the wider issue" of reorganization of the medical curriculum in general, and suggested that that effort should await the report of the Medical Curriculum Committee. I am glad to see from your editorial note in the issue of January 19th that you really agree with me that the specific proposal I put forward is "the domestic problem of the University" and need wait for nobody. Now, "A Layman," in his extremely interesting letter in your current issue, declares that my original letter "opened up a question of far greater consequence"—namely, whether a university degree in medicine should constitute a licence to practise.

The letter by "A Layman" interests me particularly, inasmuch as in an address given by me at the Royal Institute of Public Health in October, 1932,[1] I suggested that there should be a very much simplified qualification obtainable after a period of four years' training, which would give admission to the *Medical Register* and which should be compulsory upon all persons who wish to practise any branch of the healing art. I amplified this suggestion in another address in October, 1933,[2] and pointed out its desirability and, indeed, urgency in meeting the competition of the irregular practitioner. That competition has become increasingly insistent during the past year, and has culminated in a remarkable event, the passage of the second reading of a Bill in the House of Lords which would, if it became law, give to osteopaths after a very inadequate period of training completely equal status and privileges with the medical profession in the treatment of disease in general.

The points I made, and wish to repeat, were briefly two: (1) That the medical curriculum urgently called for overhauling and simplification; that greater attention was required to the basic subjects needed by the general practitioner in his daily work—medicine, surgery, and midwifery; and that relinquishment must be accepted, however reluctantly, of the ideal now no longer realizable of making the medical student know "something of everything" before he achieved registration. (2) That opportunity should be taken of this position to institute a simpler qualifying examination which would insure the public

[1] *Journ. State Med.*, February, 1933.
[2] Ibid., February, 1934.

against incompetence of its medical advisers, regular or irregular, to deal with the everyday emergencies of medical practice. It is reasonable, I submit, to insist that the osteopaths (to take a concrete example of the most vocal of the irregular practitioners), if they wish to be admitted to a Register, should have a minimal knowledge of medicine, surgery, and midwifery before embarking upon the practice of osteopathy, which claims to be a branch of the "healing art." It is unreasonable and no longer really a practicable proposition to insist that the osteopaths should go through the present medical curriculum leading to registration, entailing as it does on an average from six to seven years' preparation. A qualifying examination after four years' study would, I submit, meet all the requirements of the public, who are the final arbiters of such a question, and who clearly desire to experiment with irregular cults.

I therefore welcome "A Layman's" suggestion of a single qualifying examination; but I am afraid I do not think that his aim could be achieved "by agreement between the universities and corporations concerned," if such an agreement ever became possible, which I doubt. I believe there are too many clashing interests to make such an agreement at all probable. The Medical Curriculum Committee which I have cited is limited by its reference to a consideration of medical education in London alone; it has sat for two years and has produced no report, probably because agreement even on that restricted reference has not been reached.

This change in the requirements for registration would, I think, have to be imposed upon the medical profession by some supreme authority outside it, such as Parliament itself. University degrees in medicine would, of course, be completely untouched by such a change. They would not *per se* be qualifications to practise, but they would doubtless be essential requirements for appointments on the staffs of hospitals or in the higher public services. Their academic distinction would be in no way impaired, and might even conceivably be heightened, as "A Layman" clearly sees.—I am, etc.,

London, W.1, Jan. 26th. E. GRAHAM-LITTLE.

Registration of Osteopaths

SIR,—I have been interested in the work of the osteopath for some years, and have therefore carefully read the references to, and correspondence about, the registration of osteopaths in the *Journal*.

It is undoubtedly the duty of the medical profession to oppose this Bill, for the duly registered medical practitioner has ample scope to practise any form of therapy that he chooses, and no bar, so far as I know, precludes any osteopath from obtaining his medical degree. This, I think, has already been made clear in these columns. Wilfrid A. Streeter, in his book *The New Healing*, opposes this solution for the osteopath in the following extract from his osteopathic catechism (p. 246):

Q.—Is an osteopath a better osteopath when he has had a medical training?

A.—No, he is usually only half and half.

It is difficult for us, with our scientific approach to disease, to be able to comprehend this argument—namely, that the more we know about illness the less efficiently we can treat it; but we must not lose sight of the fact that it may have an appeal to the public. It is the public who ultimately make our laws, and public opinion which we have to obey as far as we feel a compromise can be made. In view of this I urge that all medical practitioners should make themselves conversant with the work of the osteopath, and discover why he has gained the public confidence, so that they may be in a position to oppose the legal separation of osteopathy as a method of treatment from the practice of medicine, and be able to defend this attitude. Osteopathy will stand or fall by its results, and by the opinion which the public forms about it, and it is idle for the medical profession to state dogmatically that it has no successes—for any form of treatment will in some cases produce a satisfactory result for the patient.

The important thing in any illness is not necessarily the pathological condition itself, but the patient's attitude towards it, and these two entities are very frequently regarded by the general public as one and the same thing—that is, *the illness*. There is a large physiological reserve with regard to the function of most organs of the body in carrying out the normal routine daily life. People can live quite happily with one kidney, a collapsed lung, or an incompetent cardiac valve, or, on the other hand, they may be chronic invalids. The essential difference, however, between being well and being ill is often to be found in the patient's attitude towards his illness. If by appropriate treatment a bed-ridden patient were enabled to return to his work the public would say he had been "cured," but we should know quite well that the fundamental lesion had not been cured, but that something else had happened within the patient. Re-education methods in tabes dorsalis and after cerebral haemorrhage have from time to time in certain patients enabled them again to take up their former occupations, but we do not believe that the damaged nerve fibres have regenerated. Every illness has for every patient some psychic significance, and where this element is large then the scope for "cure" of this illness for this particular patient is equally large. I think it is here that often the non-medical practitioner succeeds where the doctor has failed; for he, not realizing the unalterable basis of the illness, assumes the attitude that he can cure, applies his treatment, and the patient gets better; but I conclude that in a large number of cases he has only succeeded in changing the patient's attitude towards the illness. There are, on the other hand, a number of illnesses which are purely psychogenic, such as some gastro-intestinal disorders, some forms of asthma, and cardiac irregularity, which may in some people respond better to the influence of one person than to that of another, whatever his therapy may be.

It is the importance of this functional element of illness that makes me wonder which it is the osteopath cures, especially in view of Mr. Streeter's catechism; for if the faith-healer loses his faith in his power to heal, then all is indeed lost. The scientific approach to treatment will always attempt to distinguish between the illness itself and the patient's attitude towards it, and the appropriate means of dealing with these two entities. It is the evaluation of this functional element that makes evaluation of cure so difficult.—I am, etc.,

London, N.W.3, Jan. 27th. D. N. HARDCASTLE.

SIR,—Mr. Paul Bernard Roth's letter (January 19th, p. 131) appears to be very pertinent, in spite of it being recognized that it is not possible to prove a negative. The following case is not without interest in explaining how error can arise.

About eight years ago the father of a young diabetic patient said: "Have you any objection to my daughter being treated by an osteopath?" I replied, "What has led to your asking me?" He then told me that he had heard that Miss V. H., only slightly older than his daughter, had been cured of diabetes mellitus by an osteopath living in a large town on the south coast. I told him that if I could find out the name of the doctor who looked after Miss V. H., and learnt that what he had been told was true, my advice would be that he should take his daughter to the osteopath without delay. The doctor under whose care Miss V. H. had been replied

that she undoubtedly had had severe diabetes mellitus, that she was no longer under his care, but he happened to know that she was much better but still had a quantity of sugar in her urine.

The claim of a cure was not substantiated, and I did not advise that the aid of the osteopath should be sought. I was intrigued by the case, and hoped that some time the explanation would be forthcoming.

About two years later Miss V. H. was referred to me by Dr. H., and the parents gave me the following history. Their daughter had become suddenly very thirsty and lost weight rapidly. Their local medical adviser, Dr. A. B., diagnosed diabetes mellitus, took a serious view, and suggested a consultation with one of the leaders of the profession, who advised against insulin, but recommended a diet very poor in carbohydrate. The patient returned home to bed and gradually lost weight and strength. The parents argued that if this followed the advice of the cleverest man in the medical profession they would seek advice outside it. The little patient was taken to the south coast, where not only did the osteopath manipulate the spine, but he also advised a much less restricted diet, and due to the latter the patient gained weight and strength and was alleged to be cured.

The patient now is a hefty young woman, rather disobedient, and needs 80 units of insulin daily.

This case is not likely to be an isolated case of advice for a special complaint being sought at the wrong source, the treatment ordered doing more harm than good, and the improvement following its cessation being attributed to the osteopath.—I am, etc.,

Cap d'Ail, Jan. 23rd. O. LEYTON.

Malaria in Ceylon

SIR,—With reference to the outbreak of malaria in Ceylon I think it would be of advantage to recall the generally accepted principles of the prevention of this disease in any land where the climatic and other conditions are favourable to its development.

During a visit some years ago—I do not wish to indicate how many—I was astonished at the almost total disregard of measures for the prevention of malaria in the island. At the club people said, in reply to my timid suggestion that they seemed a bit lax, "Oh, we don't get malaria in Ceylon." I said that if they didn't there was no reason to hope that they might not, practically any time, get it very badly. Coming to Ceylon from a tropical African colony, where such carelessness would very soon have led to much loss of life from malaria, the lack of precaution seemed to me almost disgraceful.

On returning to England shortly afterwards I discussed the matter with the late Sir Ronald Ross. His comment was, to say the least, forceful. But however severe his comment may have been it cannot be questioned that it was deserved. If doctors never did agree about another thing, before or since, there is no denying that we have been unanimous in accepting the principles and practice of the prevention of malaria. In the whole field of the practice of medicine there is no other disease that so perfectly shows the value of professional prevention and cure.

The prevention is simple if sometimes, owing to the nature of the country, difficult. It consists in the regular prevention of the breeding of malaria-carrying mosquitos, and in the regular daily consumption of a dose of quinine to prevent the malaria "bug" from flourishing in the body. The latter is especially necessary wherever, and from whatever cause, the prevention of mosquito breeding is difficult. In all the great field of modern scientific achievement I can recall nothing so perfect as the good effect of the application of the teaching of such men as Manson and Ross in respect to malaria.—I am, etc.,

Hadleigh, Suffolk, Jan. 22nd. JAMES C. WATT.

Malaria in the Panama Zone

SIR,—In your issue of January 19th Dr. A. J. Orenstein correctly states how it comes about that the name of Sir Ronald Ross is connected with the construction of the Panama Canal. Reference to *Memoirs*, by the latter, shows that in 1904 Sir Ronald arrived in America to attend an international congress of arts and sciences at St. Louis, U.S.A. Thereafter he received an official invitation to visit Panama, where he remained eight days, and has placed on record amusing incidents which occurred during this period. He delivered a lecture, and as to this states: "There was little advice to give because everyone knew his work already." How did this come about in an area where malaria and yellow fever had proved so death-dealing that, with no lack of engineering skill, the French had abandoned their scheme for a canal? The answer must be that the wonderful organizing skill of Gorgas secured the victory, by utilizing the facts discovered by Ross. It is interesting to know that Gorgas did not proceed to Panama to encounter malaria without a fixed faith in the advantages so offered. In January, 1903, on receiving his appointment to undertake sanitary work in that area, he wrote to Sir Ronald Ross thus: "I will have a broad field for anti-malarial work, and I hope to be able to again show what an incalculable boon to mankind your discoveries have been." Anyone who has afforded himself the pleasure of reading the periodical reports issued during the construction of the canal cannot fail to appreciate the determination and skill with which Gorgas undertook his onerous work, and to wonder at the apathy which still enshrouds—with the happy exception of Malaya, under Sir Malcolm Watson—the Governments of tropical countries where malaria counts its victims by millions. When Gorgas had completed his world-renowned work he showed that he not only possessed the characteristics which distinguish men capable of organization and the accompanying responsibility, but of mental generosity. With the stipulation it need not be considered private, the following statement by General Gorgas was communicated to Sir Ronald Ross (March 25th, 1914): "Your discovery that the mosquito transferred the malaria parasite from man to man has enabled us at Panama to hold in check this disease, and to eradicate it entirely from most points on the Isthmus where our forces were engaged. It seems to me not extreme, therefore, to say that it was your discovery of this fact that has enabled us to build the canal at the Isthmus of Panama."—I am, etc.,

W. G. KING, C.I.E.,
Hendon, Jan. 21st. Colonel I.M.S. (ret.).

Supply of B.C.G. Vaccine

SIR,—In a recent letter in the *Journal* (October 27th, 1934, p. 791) Dr. Gregory Kayne pointed out a misstatement in my book, to the effect that B.C.G. vaccine for intradermal use could be obtained from Paris. In my reply (November 10th, 1934, p. 885) I promised to inform him as soon as I found a suitable source of supply for the general practitioner.

I have now ascertained that the vaccine cannot be obtained from any laboratory in Great Britain. Dr. Wallgren of Sweden has very kindly consented to supply it to anyone in this country at a nominal charge, but this involves the question of importation restrictions. Inquiry at the Ministry of Health reveals the fact that it can only be imported under a licence. This means one of two things: (1) Any doctor who wishes to inoculate even a single case must go through all the formality of obtaining a licence to import one ampoule; this is clearly a hopelessly unwieldy method. (2) Some firm of chemists must

become sole agents for the B.C.G. vaccine and all orders must be transacted through them. Unless some firm is willing to take this latter course—subject, of course, to the Ministry deciding to grant a licence—there appears to be a deadlock, and doctors in the British Isles will be unable to obtain the vaccine from any source.—I am, etc.,

Henley-on-Thames, Jan. 28th. K. NEVILLE IRVINE.

Natural Alkaline Water

SIR,—At the urgent request of the Cheltenham Town Improvement Committee, we wish to correct an error in a book written by us in 1929, *The Physiological Principles of Hydrology*. In this it is stated that there are no alkaline waters in Great Britain. This is an obvious oversight, since, as is well known, the Pittville spring at Cheltenham provides the only natural alkaline water in the British Isles.—We are, etc.,

R. G. GORDON.
Bath, Jan. 25th. F. G. THOMSON.

Spontaneous Regression of Cancer

SIR,—As there has recently been some correspondence in the *Journal* under the above heading, may I be allowed to quote a very interesting case?

The patient, a little fat woman of about 40 years of age, consulted me about six years ago. A short time previously she had undergone an operation in a London hospital which had necessitated radical removal of her left breast and left axillary glands for carcinoma. Her operation had been followed later by lead injections in the hospital. When she consulted me she was complaining of pain in the scar and the appearance of little hard nodules. In the course of the next twenty weeks her weight dropped from 14 to 7 stone, her liver was enlarged and stony hard, reaching below the level of the umbilicus, and she had what appeared to be an extensive consolidation of the lower lobe of the right lung.

She was given 1/4 grain of morphine sulphate injections, and eventually 1 grain of morphine every two hours for her pain. These clinical findings of secondary malignant deposits in liver and lung, etc., were confirmed by a surgeon whom I called in. Eventually she appeared to lose her pain and put on weight. Ultimately all the morphine was slowly withdrawn; the hepatic enlargement and pulmonary consolidation entirely disappeared, and her weight increased again to about 10 stone. The same surgeon saw her again at this time, and declared that he could find no evidence of secondary malignant growths anywhere. Finally she went away for a seaside holiday for about six weeks, quite her former self. Unfortunately she died a short time afterwards during an attack of asthma, from which she had suffered all her life.

Another interesting feature was the enormous tolerance to morphine which she developed. I estimated that she must have received about 1,500 grains of morphine sulphate in all. It was unfortunate that I was unable to get permission for a post-mortem examination from her relatives.—I am, etc.,

J. B. SCOTT, *M.C.*, M.B., CH.B.
London, S.W.15, Jan. 12th.

The Study of Malignancy

SIR,—I have been waiting since November 21st last for one or more of the most important medical papers to give the medical profession a lead with regard to the letter in the *Times* of that date, which was signed by Sir Walter Langdon Brown, Sir Arthur Keith, Professor G. W. Nicholson, Dr. A. F. Hurst, and Mr. Sampson Handley, outstanding figures in the scientific, medical, and surgical world. They wrote in united commendation of the work done on malignant disease by Mr. Morley Roberts, in his book *Malignancy and Evolution*. This letter seemed to me a very remarkable medical event. So far as I know such a thing never happened before in the history of medicine, and yet not a word has been said in any authoritative medical paper of something which, at its lowest estimate, was "news" of the highest interest. So far as I can gather it seems obvious that the five signatories of the letter in question did not write it merely to please the author, or because they liked his literary work, but because they honestly believed that recognition of what he had written on malignancy was in the interests of the public and the world at large.

Is there, then, any reason for silence about work which led them to take this utterly unprecedented step? Is there any obstacle? Some may think so. I should hate to believe it, but I cannot refrain from saying that a large majority of the medical profession is at present profoundly dissatisfied with cancer research, and would welcome light from whatever quarter it came.—I am, etc.,

A. H. B. KIRKMAN, F.R.C.S.ED.
Staplehurst, Kent, Jan. 27th.

⁂ Mr. Morley Roberts's thoughtful contributions to the study of malignant disease have not passed without remark in these columns. *Warfare in the Human Body* was reviewed on October 23rd, 1920, and a long notice of *Malignancy and Evolution* appeared on July 3rd, 1926.—ED. *B.M.J.*

Meat in the Child's Dietary

SIR,—In a pamphlet issued by the British Broadcasting Corporation and entitled "The Day's Food: Six Months to Five Years" the statement is made: "There is a mistaken idea that it [meat] is not needed by the young, but this is not so, as, on the contrary, it is *most necessary for growth*." (The italics are my own.) I do not now ask for the hospitality of your columns for the purpose of advancing any vegetarian principle as such, but rather would I beg to solicit your kind offices in refuting what is so plainly a misstatement. What precisely can be the difference between "necessary" and "most necessary" must surely be left to the high authorities of the B.B.C. to decide, but, even minus the superlative, to the plain reader the sentence quoted can only mean that healthy growth without the aid of flesh foods is impossible—which, of course, is absurd, as parents of thousands of vegetarian children who have never tasted flesh foods can testify. Having regard, indeed, to the great mass of evidence from vegetarian experience which is now available, it is truly astonishing that a protest from this office to the B.B.C. should have been met only with a refusal to allow the false statement to be adjusted, as also with the innocent assurance that the anonymous author of the pamphlet is none other than "a first-class authority on diet."

Not only, I would add, is denial possible from vegetarian experience, but the great body of medical and scientific testimony also, as I would submit, is quite contrary. For the sake of brevity I mention but a few authorities. It was the decision of the International Scientific Food Commission, which met in several European capitals during the Great War, that "no absolute physiological need exists for meat, since the proteins of meat can be replaced by other proteins of animal origin, such as those contained in milk, cheese, and eggs, as well as by proteins of vegetable origin"; Professor E. V. McCollum has declared that "we could entirely dispense with meats without suffering any ill effects whatever"; while Sir Robert McCarrison (whose pre-eminence as an authority on the diet of the Indian peoples is well known) says categorically in his small primer entitled *Food* (p. 69): "If the food contains

enough milk and milk-products, then it is not necessary to eat flesh-meat at all."

Unwilling as I am in this letter to stress any point except that on which scientific authorities are agreed, it must also be entirely germane to the subject of this letter to point out that in the *Lancet* of January 19th there appears an article entitled "An Important Experiment in First-Class Protein," by Dr. Corry Mann (with whose experiments in child nutrition members of the medical profession will be familiar), with an introduction by the President of the Royal Society, in which the following words occur: "The protein of milk appears to be of more value for purposes of nutrition than the protein of meat." Doubtless, in growth, other factors besides protein have to be considered, but it will be generally agreed, I think, that Dr. Corry Mann's suggestion as regards milk is the more strengthened, and not weakened, on that account. Similarly, in the January number of *Nutritional Abstracts and Reviews* (issued by the Rowett Institute at Aberdeen) occurs an article by Dr. Margaret Fixsen, on "The Biological Value of Protein in Nutrition," in which it is said: "Of the animal proteins those of whole milk and whole eggs share the first place," while, even among flesh proteins, those derived from muscle meat (which are those referred to by the B.B.C. broadcaster) are said to be inferior to some others. —I am, etc.,

FRANK WYATT,
Secretary, London Vegetarian Society.

8, John Street, London, W.C.2, Jan. 28th.

Recovery from Hanging

SIR,—Dr. Aitchison Robertson, in his intensely interesting article "Recovery from Judicial Hanging" (*Journal*, January 19th), enumerates several instances of this rather remarkable happening. I venture to add to the list.

Patrick Ledmond was hanged for street robbery in February, 1767. He had been suspended for twenty-eight minutes, when he was rescued by the mob and carried to an appointed place. Here a surgeon was in attendance. He performed tracheotomy, and the man was restored to life.

The strange case of Gordon, though not successful, is worth repeating. He was a highwayman who was sentenced to death for a series of robberies. He did all he could to secure a reprieve, finally offering a reward to anyone who would suggest any means by which he might escape his fate. A doctor named Chovet saw the man in gaol, performed a tracheotomy, leaving a tube down Gordon's throat, and told him when hung to close his nose and mouth. When he was cut down after hanging for forty-five minutes he was still breathing and his heart was beating. He was taken to a public-house, where the doctor was awaiting him, but he died in a few moments.

The old method of execution by hanging followed by mutilation prevented any possibility of a man escaping his doom. The sentence was as follows:

"That the traitor is to be taken from the prison and laid upon a sledge or hurdle and drawn to the gallows or place of execution, and then to be hanged by the neck until he be half dead, and then cut down, and his entrails to be cut out of his body, and burnt by the executioner: then his head is to be cut off, his body to be divided into quarters, and afterwards his head and quarters to be set up in some open place directed."

In carrying out this sentence the prisoner was hanged until he was half strangled, and then cut down. The executioner slit his chest open, plucked out the heart, and held it up to view of the assembled mob, calling, "Behold the heart of a traitor." Sometimes he opened the abdomen, pulled out the bowels, and burnt them in front of his victim.

"Suspendantur et viventes ad terram posternantur, et interiora sua extra ventes suos capiantur ipsiusque viventibus comburantur."

The present method of the long drop causes instant and certain death, and again there is no possibility of escaping fate. This method causes a fracture-dislocation of the cervical vertebrae pressing on or severing the cord or medulla. There are some excellent specimens of fracture-dislocation of the vertebrae, as the result of judicial hanging, in the museum of the Royal College of Surgeons of England. A present-day execution is soon over. From the entry of the hangman into the cell till death occurs is about two minutes.—I am, etc.,

Hove, Jan. 20th. L. A. PARRY.

SIR,—Dr. Aitchison Robertson's article on "Recovery after Judicial Hanging," and his reference to means of resuscitation practised in Ireland, prompt me to send you a relevant stanza from "The Night before Larry was Stretched," a ballad descriptive of the carousal permitted as a solace to the criminal on the eve of his execution. Larry sings:

When I dance 'twixt de eart' and de skies
De clargy may bleat for de struggler,
But when on de ground your friend lies
Just tip me a snick in de jug'lar;
For dat's de poor suff'rer's last hope,
As de surgeons of Otomy[1] tell us,
Dat when I'm cut down from de rope
You'll bring back de wind to my bellows
And set me once more on my pins.

The ballad was at one time very popular in Ireland, and was sung to an old tune, named after the song, which, many will be surprised to learn, was taken by Handel and ennobled into "How Beautiful are the Feet." —I am, etc.,

Dublin, Jan. 22nd. ROBERT H. WOODS.

Needed: Information on Twins

SIR,—Those of us who had the pleasure of listening to the excellent paper on twins read before the Eugenics Society by Dr. Fraser Roberts the other day must have been impressed by the appeal made to the medical profession for assistance in obtaining accurate details of the birth of twins.

Invaluable as has been the information obtained from a study of twins, and particularly "identical" twins, the work has been greatly handicapped by the lack of records of twin births, giving such details as the state of the membranes, etc. Surely this is a matter in which the general practitioners of the country can render unique assistance to the cause of medical research, and particularly that branch of it which is now, if somewhat belatedly, obtaining the recognition which we of the medical profession have been inclined to withhold in the past—namely, eugenics.

We all appreciate that the family doctor has to cut down his paper work to a minimum, but here is a case where a little extra trouble will be of inestimable value to the cause of research. All that is required is that after attending the birth of twins, or triplets, the doctor should make a note of the details of the case and file it away for reference. In the same way maternity hospitals would insist on such details being entered in all their case records. Too often in the past has a promising investigation been nullified, or well-nigh so, because of the lack of such details.—I am, etc.,

London, W.1, Jan. 24th. WILLIAM A. R. THOMSON.

[1] "Otomy" = Anatomy.

Diphtheria Prophylaxis

SIR,—In justice to alum-toxoid prophylactic, which offers added help to those combating diphtheria, and to Dr. C. J. McSweeney, whom I entirely misled owing to confusion of two numbers in a letter, will you allow me to make a small correction? During the recent past some American and English clinicians had tried toxoid—that is, the formolized whole-culture filtrate, to which a small quantity of alum had been added, just sufficient to produce turbidity. This, though much more easily prepared and therefore a cheaper material for large campaigns, did not give as high immunity as alum precipitate washed free from broth and other "impurities," which we have used in our later work. The batch referred to by Dr. McSweeney at the top of page 104 (*Journal*, January 19th) was *not* a washed precipitate, but was toxoid plus alum.

One other point. Dr. McSweeney credits me with the phrase "detector dose," referring to the preliminary test for sensitivity. It was Dr. Chesney of Poole who coined this useful phrase; he used this method independently in his highly successful campaign in Dorset.—I am, etc.,

Beckenham, Kent, Jan. 29th. R. A. O'BRIEN.

Hospital Administration

SIR,—The Incorporated Association of Hospital Officers recently discussed the question of whether the chief administrator of a hospital should be a layman, and having had a varied experience of hospitals in this and other countries, some with lay and others with medical men in charge, I venture to suggest that, provided administrative ability is equal, it is infinitely preferable that the superintendent should be a doctor and not a layman. The primary function of a hospital is the care and treatment of sick persons; consequently the members of the medical staff are its most important officials, and its reputation will depend mainly on their work and ability. However ramshackle its buildings and equipment and indifferent its administration, with a first-class medical staff a hospital tends to gain a high reputation; whereas with a second-rate staff a hospital cannot obtain a high reputation, however up to date its buildings and efficient its management. A hospital, therefore, is unlike a hotel, the important officials of which are laymen.

First let us examine the question from the more purely medical side. With a doctor in charge the medical work would be supervised more safely and the discipline of residents more smoothly maintained—especially would these be important when the more senior members of the staff were absent. The high traditions of the profession and the confidential relations between doctor and patient would be better safeguarded; the various departments would be co-ordinated better. The residents would obtain more valuable and authoritative advice when difficulties arose—especially important in those hospitals with few and inexperienced housemen (for example, difficulties with police, admissions, discharges, transfers, etc.). The inspection of food and milk—a most important duty in a hospital—would be conducted on more scientific lines; the relations between coroner and hospital would be more friendly and confidential; the scrutiny of indents for instruments and appliances would be conducted expertly; and so on. These reasons may appear unimportant when applied to some of the larger hospitals possessing numerous, capable, and experienced medical residents, but in others their importance is very real, as experience in this and other countries shows.

Secondly, the question will be examined from the business side. This includes such duties as the supervision of the details of buildings and extensions, equipment, repairs, supplies, kitchens, laundry, lay male personnel, secretariat, etc. The co-ordination of these duties with the various medical activities is the essence of successful hospital administration. So complex has this become, owing to specialization, etc., that it is difficult for the chief administrator to obtain, without medical training, the maximum of good for the patients combined with the optimum of efficiency, economy, and progress. Doctors, it has been said, have neither the proper business training nor the necessary interest in administrative details to make the best managers, and there is some truth in this contention. Hospital administration should be regarded by doctors more seriously as a specialty, like any other specialty; for it requires, for the best results, special training. Then, it has been suggested, the best system is to have two coequal heads—a medical superintendent and a lay administrator. Dual control, however, seldom gives the best results. To inquire into the systems of some of the most efficiently managed and up-to-date hospitals in other parts of the world is instructive. For example, the Mayo Clinic possesses a medical administration that is world-famous and second to none. It might be laid down, therefore, that the ideal superintendent should possess not only the right aptitude, financial acumen, a quick, judicial, and methodical mind, tact, and forcefulness, but a training in hospital administration and in medicine.

Thirdly must be considered the settling of the more important questions of policy, appointments, finance, salaries, formation of rules, and, in our voluntary hospitals, the raising of money. These matters are the concern and function of the ministry, board of governors, or directors, and are, or should be, entirely outside the duties of the chief administrator. It has been stated that as the Minister of Health and First Lord of the Admiralty are laymen, so the superintendent of a hospital should not be a doctor; but these are not parallel cases. In a voluntary hospital organization these Minsters correspond to the chairman of the board of governors, who is a layman.—I am, etc.,

London, S.W.1, Jan. 7th. KENNETH BLACK, F.R.C.S.

Expectant Treatment of Acute Appendicitis

SIR,—The following case prompts me to put forward an argument against the present-day expectant treatment of acute appendicitis.

A girl, aged 20, previously healthy and robust, developed what was thought to be acute appendicitis in January, 1932; she was forthwith admitted to hospital, the attack subsided, and the appendix was removed some six weeks later. The abdominal wound healed normally, but the patient never regained her former health, and has suffered from anorexia and symptomless wasting ever since. She now weighs 4 st. 7 lb. She has been seen by several medical colleagues, none of whom have been able to establish a diagnosis. As one of the possible diagnoses tuberculous salpingitis has been suggested.

It now occurs to me that, although nothing abnormal was noted at the time of operation, had the abdomen been opened during the stage of acute illness the appendix might have been found to be normal and some swelling of the tubes disclosed, which would have given a valuable clue to the cause and treatment of the subsequent illness.

The moral of this case would seem to be that the adoption of expectant treatment in cases of acute appendicitis may lead to the irreparable loss (especially in females) of valuable evidence which would have been disclosed by immediate operation. I should be interested to hear of any similar experiences.—I am, etc.,

L. J. PANTING, B.Ch.Cantab.

Bradford-on-Avon, Wilts, Jan. 27th.

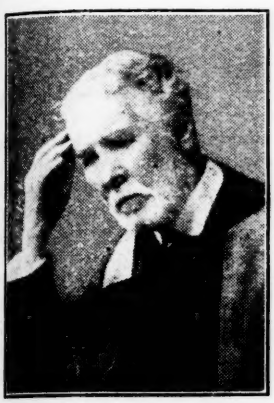
Obituary

MICHAEL GRABHAM, M.D., LL.D., F.R.C.P.

Madeira

Dr. Grabham, the patriarch of Madeira, died at Funchal on January 28th—less than three weeks after his ninety-fifth birthday. In him the *British Medical Journal* loses a very old friend and occasional contributor, who made a point of calling at the editorial office on his summer visits to England. He joined the British Medical Association in 1875 and remained a member until two years ago, when he said "I consider my course is run."

Michael Comport Grabham, youngest son of John Grabham, M.D., of Rochford, in Essex, was born on January 9th, 1840. He was educated at King's College, London, and St. Thomas's Hospital, obtaining the M.R.C.S.Eng. in 1861, the L.R.C.P.Ed. in 1865, and the M.D. of Aberdeen University in 1867. Long afterwards Aberdeen made him an LL.D. He became M.R.C.P.Lond. in 1868, and was elected F.R.C.P. in 1877, three years before Sir Thomas Barlow, who now becomes the senior Fellow at the age of 89. After six months as house-surgeon at St. Thomas's Dr. Grabham went to Madeira in 1861, sailing in the coarse discomfort of the 200-ton brig which (as he wrote in his last contribution to the *Times*) has now become the 20,000-ton liner. At that time the victims of tuberculosis filled the hotels of Funchal, and the active-minded young man who took medical charge of them had ample opportunity of studying the effect upon invalids of open-air life in a warm and equable climate.



In 1865 Dr. Grabham married Mary Blandy, a member of a well-known family in the island; and in the same year he published a small practical book on *Madeira: Its Climate and Resources*—the first of many writings on this and kindred topics. Thenceforward, apart from regular stays in London and in other towns where the British Association held its annual meetings, the island was his home, and he has been well described as its most beloved and influential figure. For many years he practised there as a consulting physician, but found time to indulge in varied intellectual pursuits and hobbies, and to participate to the full in social life. His was indeed a genial and kindly nature. He delighted in human contacts. Dr. Grabham's hospitality was proverbial, and he seemed to remember everyone he had met in his long life. With these social gifts he combined the temperament and outlook of the born naturalist. It would be hard to say which branch of science attracted him most, but perhaps marine zoology lay nearest to his heart. He had a wide knowledge of the fish and crustaceans in Madeira waters; the island flora and fauna were a never-ending source of pleasure to him; his scientific interests ranged from entomology to atmospheric electricity, and from earthquakes to bell-casting. At his house, half-way up the hill behind Funchal, he had a large collection of clocks of every sort (including a full-size church clock), and a two-manual organ, upon which he played with a musician's skill. So well known was he as an amateur organist that he had the honour of giving recitals in St. Paul's, the last occasion being soon after the reopening of the Cathedral in 1930, when he was in his ninetieth year.

At the centenary meeting of the Geographical Society in 1907 Dr. Grabham represented the Royal College of Physicians of London. Fourteen years later he delivered the Bradshaw Lecture, in which he gave a description of subtropical esculents from the economic and biological points of view. A full abstract of this appeared in the *British Medical Journal* of November 12th, 1921. His last contribution to our columns (a short paper on "Harvey's Ruined Burial Place") appeared four years ago as part of the appeal for the rebuilding of the church tower at Hempstead in Essex.

He leaves two sons and a daughter. One of the sons is Government geologist in the Sudan, and the other, Dr. Michael Grabham, is a medical graduate of Cambridge.

[The photograph reproduced is by Lafayette Ltd.]

HENRY WALDO, M.D., M.R.C.P.

Consulting Physician, Bristol Royal Infirmary

We regret to announce the death, on January 25th at Clifton, of Dr. Henry Waldo. He was for thirty-three years a member of the visiting medical staff of the Bristol Royal Infirmary, and combined the work of consulting physician and dermatologist with general practice.

Henry Waldo was born in Bristol in 1846. His younger brother, the late Dr. F. J. Waldo, was coroner for the City of London and borough of Southwark. From Bristol Grammar School Henry Waldo went to the Bristol Medical School in 1867, and it is interesting to record that two of his fellow students there, who entered a year before him, Dr. Conrad Fitzgerald of Newfoundland and Dr. J. E. Shaw of Clifton, are still with us. Dr. Waldo continued his medical studies at St. Bartholomew's Hospital and at the University of Aberdeen, obtaining the diploma of M.R.C.S.Eng. and the M.B. and C.M. degrees of Aberdeen in 1871; he proceeded M.D. two years later. After holding the posts of resident medical officer at the Royal General Dispensary in London and clinical assistant at the Royal London Ophthalmic Hospital, Dr. Waldo returned to Bristol. In 1873 he was appointed assistant physician to the Royal Infirmary, and within three years became full physician. In 1880, at the request of the governors, he took charge of a new department for diseases of the skin, but continued his duties as general physician until 1907, when he was appointed to the consulting staff. He became M.R.C.P. in 1888, but declined in later years to allow his name to be put forward for election to the Fellowship.

Dr. Waldo was president of the old Bath and Bristol Branch of the British Medical Association in 1902; he was also president of the Bristol Medico-Chirurgical Society in 1907, and of the Dermatological Society of Great Britain. His membership of the B.M.A. covered a period of nearly sixty years. He had been a widower for the past twenty-six years. One of his sons, Dr. H. C. Waldo, who also studied at Bart's, is medical superintendent of the Nottinghamshire Mental Hospital.

THE LATE DR. M. F. CAHILL

A correspondent writes: The death of Dr. Mark F. Cahill is a serious loss to the medical community in Belfast, and will be deeply regretted by his many patients, who held him in the highest esteem. As mentioned in the obituary notice printed last week, he was for many years an ardent member of the council of the Northern Ireland Branch of the British Medical Association. Dr. Cahill was an active Freemason, and remained a member of his lodge for upwards of forty years. In spite of the

professional demands on his time, he gratified a cultured taste in literature, and, with fine discrimination, he had acquired a valuable library of classical and modern authors. He came of a medical family, his father having been a well-known practitioner in Dublin, and two of his brothers are members of the medical profession. Of these one practised in Dublin as a specialist, and the other is Colonel R. J. Cahill, D.S.O., R.A.M.C., who resides in England. Another brother, Sir Robert Cahill, has for the past fifteen years held the office of commercial counsellor at His Majesty's Embassy in Paris. Dr. Cahill is survived by his wife and two daughters, to whom his colleagues tender their sympathy.

Dr. HUGH ALEXANDER LOGAN, who was for forty-five years a resident of Ballyclare, died in Belfast on January 12th last at the age of 75. He was held in high esteem in his native town, to which he returned after practising in Rasharkin for five years. He qualified in 1885, after studying medicine at Queen's College, Belfast, and obtained the M.D. and M.Ch. degrees of the Royal University of Ireland. He was a member of the Ballyclare Town Council, and subsequently its chairman; and the welfare of the inhabitants was always his interest. Dr. Logan leaves a widow and four daughters. Of him a professional colleague, who knew him intimately for many years, writes: "Dr. Logan spent most of his professional life in Ballyclare. He had a large practice, both in the town and in the neighbouring country, and he had deservedly won the trust and affection of many. He was an exceedingly hard worker, never sparing himself if he thought he could serve another; he practically never took a holiday, and was endowed with that valuable gift of being able to diagnose potentially serious cases in their earliest stage, and thus he prevented many tragedies. His death was due to a stricture of the oesophagus, and eight days before he died, when he was unable to swallow even water, he was out paying visits to his country patients. He died as he had lived, thinking of and working for others, and the state of his books showed that the question of fees occupied a small place in his estimation; neither money nor self was his god."

We regret to announce the death, at the age of 50, of Dr. JAMES ALEXANDER GORDON of Wigton, Cumberland, which occurred on January 25th. He had suffered ill-health for the past three years with great fortitude. Dr. Gordon, who was a native of Buckie, Banffshire, graduated M.B., Ch.B. at the University of Edinburgh in 1908. After long assistantships in Edinburgh and Durham he became ship surgeon on the Blue Funnel line, travelling extensively. During the war he saw active service in the Navy and in the Air Force. After being demobilized he settled in Wigton, and worked there for a little over sixteen years. Skilful and attentive, he was greatly liked by his patients and had their full confidence. He married Phyllis Glendenning, second daughter of the late W. G. Glendenning of Newcastle-on-Tyne, who survives him with a son and daughter. His remains were cremated in Edinburgh on January 28th.

The following well-known foreign medical men have recently died: Dr. CÉSAR ROUX, professor of surgery at Lausanne, aged 77; Dr. E. W. WALCH, professor of bacteriology in the University of Batavia (in the recent air disaster to the Dutch liner); Professor WILHELM TAUFFER of Budapest, an eminent gynaecologist and founder of a school for Hungarian women doctors, aged 83; Professor HUBERT PETERS of Budapest, a prominent gynaecologist and eugenist, aged 75; Dr. WENDELL C. PHILLIPS, professor of otology in the New York Post-Graduate Medical School, and author of a textbook on diseases of the ear, nose, and throat; Dr. EDOUARD BAUER of Neuchâtel, president of the Swiss Society of Internal Medicine; and Dr. RICARDO NOZANO MONJON, formerly dean of the Medical Faculty of Clinical Surgery at Saragossa.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

Parliament reassembled this week. The House of Commons discussed and approved Estimates for the Unemployment Assistance Board for grants to local authorities in distressed areas and for the new "special area" schemes. The Housing Bill came up for second reading.

Mr. Levy, who has first place for a motion on the House going into committee on the Civil Estimates, proposes to call attention to water supply throughout the country. Captain Harold Balfour has third place on the same Estimates, with a motion on the health and mortality of the nation. The latter may not be reached.

In the House of Commons on January 28th a report was received of the Examiners of Petitions for Private Bills, stating that among the Bills which had complied with the standing orders and would originate in the House of Lords was the St. Bartholomew's Hospital Bill.

B.M.A. Standard in Unemployment Assistance

On January 28th the House of Commons considered a supplementary estimate for £5,000,000 for salaries and expenses of the Unemployment Assistance Board. Mr. OLIVER STANLEY said that he had never attempted to conceal from the House that the regulations, if passed, would lead, in certain cases, to a reduction. Mr. T. SMITH said that they had been told by the British Medical Association that it was going to write a cookery book for people with small incomes. He challenged the British Medical Association, or any member of the House, to draw up a cookery book giving meals that would nourish the body as it ought to be nourished, and which could be purchased by those who were in receipt of the allowances under the new regulations. Miss RATHBONE said that it was not the case that the new scales, in almost every instance, satisfied the standards laid down by the British Medical Association. When a family was living wholly on the scale, and where the question of resources did not come into the case at all, if the House brought the British Medical Association standard up to the present cost of living and compared it with the scale allowed under the regulations it would be found that there were deficits varying from a few pence to something like 11s. in the case of a man with five children.

Mr. R. S. HUDSON said all the cases had not yet been finally decided, and the whole of the people had not exercised their right of appeal.

When the debate was resumed, on January 29th, Mr. OLIVER STANLEY said that the Unemployment Assistance Board was looking into every hard case. If inquiry showed that there was hardship the Board would have no hesitation in advising the Government of the amendments that were necessary, and in asking the Government to submit them to the House. He outlined concessions which could be made immediately by instruction from the Board.

The House agreed to the vote.

Matrimonial Causes Bills

On January 29th, in the House of Lords, Lord MERRIVALE moved the second reading of the Matrimonial Causes (Procedure in Suits for Nullity) Bill. The measure provides that, in any case in the High Court in England wherein a decree of nullity of marriage is prayed on the ground of the impotence of one of the parties, the evidence on the question of sexual capacity shall be heard *in camera*, unless on an application in that behalf the judge is satisfied that in the interests of justice the evidence ought to be heard in open court and directs that it shall be so heard. The LORD CHANCELLOR said that the Supreme Court of Judicature (Amendment) Bill, which was now before the House of Commons, contained a clause to the same effect. He asked their Lordships to give Lord Merrivale's Bill a second reading, but he hoped that it might not be necessary to proceed on

the remaining stages, since the other Bill might be passed in the course of the next few days.

The Bill was read a second time.

In the House of Lords, on January 29th, the Matrimonial Causes (Amended Procedure) Bill was read a second time.

Water Supplies: Present Position

On January 28th Sir HILTON YOUNG, replying to Mr. Paling, said that urban water undertakers generally were in a much stronger position than they were at that time last year, both in consequence of the measures taken to improve supplies where necessary, and because reserves had been largely replenished by the heavy December rains. Deep underground sources in a few areas were still not up to normal level. In rural areas the primary need was for permanent supplies, and the total capital cost of schemes for which State grants had been provisionally allocated was now over £2,600,000 for schemes in 940 parishes.

Coroners' Inquests: Committee of Inquiry

On January 29th Sir JOHN GILMOUR informed Mr. Morgan Jones that he had under consideration whether changes in the law or practice regarding coroners' inquests were desirable. The issues involved were complex, and, after consultation with the Lord Chancellor, he had decided to appoint a committee of inquiry into the subject. He hoped to be able to announce the membership and precise terms of reference of the committee at an early date. Mr. Jones asked whether pending the result of such an inquiry it would be in the public interest to circularize coroners to secure that their inquiries should be confined to the cause of death. The Minister said that it would be better to await the result of the pending inquiry.

Protective Equipment for Mine Workers

On January 29th Mr. ERNEST BROWN, replying to Mr. T. Smith, said that he had given formal notice of his proposal to make general regulations on the provision of fire-damp detectors for use by workmen in mines. The notice was published on January 16th last, and the period during which objections might be lodged expired on March 7th. Good progress, he said, in reply to Mr. Tinker, was being made in the development of protective equipment for mine workers, particularly with hard hats, of which some 60,000 had recently been supplied. He had had no consultation with the colliery owners collectively regarding protective equipment, but, in view of the importance of the matter, he had recently come to an arrangement with the Safety in Mines Research Board for the appointment of a special technical officer who would devote his whole time to this question under the general supervision of the Board's chief mining engineer.

Consultant Services under National Health Insurance.—Sir HILTON YOUNG, on January 28th, informed Mr. Llewellyn-Jones that he had received representations from organizations associated with the administration of national health insurance, urging that the scope of medical relief should be extended to the provision of consultant services and of improved diagnostic facilities, as recommended by the Royal Commission of 1926. He had, however, nothing to add to a reply on the matter which he gave on November 8th last year.

Mine Fatalities in British India.—Sir SAMUEL HOARE told Mr. Grundy, on January 28th, that during 1933, at mines in British India, there were 142 fatal accidents, in which 130 men and twenty-three women lost their lives, and thirty-two people, whose sex was not recorded, were injured. There were 655 other serious accidents, involving injuries to 670 persons, 605 of whom were men and sixty-five women. Figures for 1934 were not at present available.

Economy Cuts of 1931.—Sir HILTON YOUNG states that information available indicates that most local authorities which made reductions in the salaries and wages of their staffs in 1931 have restored them in full, and that only a few have not restored any part of the reductions.

Notes in Brief

Mr. Hore-Belisha states that he proposes to bring the speed limit of thirty miles an hour in built-up areas into force on March 18th.

Mr. Ernest Brown states that 1,068 persons were killed and 3,175 seriously injured in and about coal mines during 1934.

Mr. Ramsay MacDonald states that immediate legislation is proposed to deal with ribbon development.

Universities and Colleges

UNIVERSITY OF OXFORD

Professorship of Pathology

The electors have appointed Howard Walter Florey of Magdalen College, late Fellow of Caius College, Cambridge, and now Joseph Hunter Professor of Pathology in the University of Sheffield, to the chair of pathology from May 1st next, in succession to the late Professor Dreyer. Professor Florey graduated M.B., B.S. at the University of Adelaide in 1921; he holds the B.A. and B.Sc. degrees of Oxford and the M.A. and Ph.D. of Cambridge.

At a congregation held on January 24th the following medical degree was conferred:

B.M.—N. K. Stott, C. A. Hinds-Howell.

Congregations will be held for the purpose of granting Graces and conferring degrees on March 2nd, May 2nd, June 8th and 27th, July 20th, and August 3rd, at 2.30 p.m.

UNIVERSITY OF CAMBRIDGE

At a congregation held on January 23rd the following medical degrees were conferred:

M.B., B.CHIR.—F. Ridehalgh, Susanta Kumar Sen, L. C. Martin.

M.B.—H. H. Bayley.

B.CHIR.—*R. M. Jones, *W. H. H. Jebb, A. G. V. Aldridge, W. H. C. M. Hamilton, J. G. Chappel, J. W. Macmillan, A. R. Pope, M. S. M. Rayner, Feerose Hormasji Masina.

* By proxy.

UNIVERSITY OF LONDON

A meeting of the Senate was held on January 23rd, with the Vice-Chancellor (Professor L. N. G. Filon, F.R.S.) in the chair.

The William Julius Mickle Fellowship for 1935 was awarded to Dr. S. Zuckerman, and the Carpenter Medal for 1934 to Dr. R. J. Lythgoe.

UNIVERSITY OF DUBLIN

At the winter commencements, held on January 23rd, the following medical degree was conferred:

M.D.—W. J. E. Jessop, Elinor D. Price (née Stopford), C. de V. Shortt, J. E. Stokes.

SOCIETY OF APOTHECARIES OF LONDON

The following candidates have passed in the subjects indicated:

SURGERY.—J. A. Carter, R. J. Crompton, J. E. Garson, S. M. Sabet.

MEDICINE.—R. J. Crompton, L. Gottlieb, W. McC. Graves-Morris, J. Richter, D. Rocyn Jones.

FORENSIC MEDICINE.—R. J. Crompton, M. M. El Badri, G. E. Ftyaras, D. W. Hoodless, I. M. Mc[illegible]re.

MIDWIFERY.—G. G. O. Evans, T. I. Palmer.

The diploma of the Society has been granted to S. M. Sabet, W. McC. Graves-Morris, and D. Rocyn Jones.

BRITISH COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS

At the quarterly meeting of the council, held on January 26th, it was decided to confer the Honorary Fellowship upon Nagiub Mahfouz Bey of Cairo.

The following were elected to the Membership of the College:

M. D. Black, J. G. Bonnin, I. Goldberg, R. MacK. Honey, K. A. K. Hudson, R. W. Knowlton, E. Maduram, H. McCurrich, J. L. Mewton, Joyce Morgan, R. H. Nattrass, O. Robertson, Helen Rodway, Margaret Rorke, F. Stabler, J. A. Stallworthy, D. M. Stern, H. Stirling.

Dr. T. G. Wilson (Adelaide) was admitted a Foundation Fellow (*in absentia*), and the following were admitted to the Membership:

J. R. C. Canney, D. A. D. Kennedy (*in absentia*), Marjorie J. Lyon, R. C. Thomas, R. G. Worcester.

The Services

R.N. MEDICAL COMPASSIONATE FUND

At the quarterly meeting of the directors of the Naval Medical Compassionate Fund, held on January 25th, with Surgeon Vice-Admiral R. W. B. Hall, C.B., K.H.P., Medical Director-General of the Navy, in the chair, the sum of £100 was distributed among the several applicants.

DEATHS IN THE SERVICES

Colonel Hubert Alaric Bray, C.B., C.M.G., late R.A.M.C., died at Chilcombe, Winchester, on January 23rd, aged 67. He was the son of Major-General G. F. C. Bray. Born at Guildford on July 18th, 1867, he was educated at King's College Hospital, and took the M.R.C.S., L.R.C.P.Lond. in 1888. After acting as house-surgeon at King's College Hospital, he entered the Army as surgeon lieutenant on July 27th, 1892, became lieutenant-colonel on November 27th, 1914, and colonel on December 26th, 1917, and retired in 1921. He served with the Expeditionary Force in the Tirah campaign of 1897-8 on the North-West Frontier of India (medal and clasp); and in the Sudan in 1906, in operations against the Nyam-Nyam tribe, in the Bahr-el-Ghazal Province, as senior medical officer, was mentioned in dispatches in the *London Gazette* of May 18th, 1906, and received the medal with clasp, and the 4th Class of the Osmanieh. During the war of 1914-18 he was A.D.M.S. at Mudros during the Gallipoli campaign, and afterwards A.D.M.S. of Egyptian hospitals, and later D.D.M.S. of the Seventeenth Army Corps in France, and of the Rouen hospitals; and was mentioned in dispatches in the *London Gazette* of July 13th, 1916, and May 25th, 1918. After the war he was D.D.M.S. of the Western Command. He received the Medjidieh, 3rd Class, in 1903, the Osmanieh in 1906, the C.M.G. in 1916, and the C.B. on September 1st, 1919. He served with the Egyptian Army from 1899 to 1906, and again from 1912 to 1915, as principal medical officer, and was President of the Sudan Sleeping Sickness Commission and of the Central Sanitary Board of the Sudan. After retirement he served as medical superintendent of the Ministry of Pensions hospital at Bath. He married Maude, fourth daughter of the Rev. W. J. Boys, and had two sons and four daughters.

Medical News

The annual dinner of past and present students of the Royal London Ophthalmic Hospital will be held at the Langham Hotel, Portland Place, W., on Thursday, February 7th, at 7.30 p.m. The chair will be taken by Mr. Malcolm L. Hepburn. Applications for tickets (15s., excluding wine) should be addressed to Mr. P. G. Doyne, 60, Queen Anne Street, W.1.

The fourteenth annual dinner of the Society of Radiographers will be held at the Restaurant Frascati, Oxford Street, W., on Saturday, February 16th, at 7.15 p.m., with the president, Dr. L. A. Rowden, in the chair.

Bacteriological and other standards for ice-cream will be discussed at a sessional meeting of the Royal Sanitary Institute at 90, Buckingham Palace Road, S.W., on Tuesday, February 12th, at 6 p.m. Dr. L. H. Lampitt and Mr. E. B. Anderson will open the discussion, and several public health officers will also speak. The chair will be taken by Dr. Thomas Orr.

A meeting of the Pharmaceutical Society of Great Britain will be held at 17, Bloomsbury Square, W.C., on Tuesday, February 12th, at 8.30 p.m., when a lecture on "The Work of the Government Laboratory" will be given by Sir Robert Robertson, F.R.S.

A lecture and demonstration on contraceptive technique will be given on February 7th, from 2.30 to 6 p.m., at 108, Whitfield Street, Tottenham Court Road, W. Application for tickets, which will be supplied to medical practitioners only, should be made to the honorary secretary, C.B.C., at that address.

The Guthrie Lecture of the Physical Society will be delivered at the Imperial College of Science and Technology, South Kensington, S.W., at 4.45 p.m. to-day (Friday, February 1st), by Professor Arthur H. Compton of the University of Chicago, who is at present Eastman visiting professor at Oxford University. The title of the lecture is "An Attempt to Analyse Cosmic Rays."

The Section of Laryngology of the Royal Society of Medicine meets to-day (Friday, February 1st) at 4.30 p.m., and not at 5 p.m. as announced last week (p. 186).

The special meeting of the Clinical Section of the Royal Society of Medicine, on "Generalized Diseases of Bone," arranged for February 12th, has been postponed until May 10th.

The Fellowship of Medicine (1, Wimpole Street, W.) announces that a lecture on diarrhoea will be given at 11, Chandos Street, W., on February 8th, at 4.15 p.m.; the lecture on February 15th will be on jaundice. At the Wellcome Museum of Medical Science, on February 7th, at 3 p.m., there will be a demonstration on syphilis, and on February 14th on helminthology as it affects the clinician. A demonstration of surgical cases will be given at the National Temperance Hospital on February 9th, at 3 p.m. Forthcoming special courses include: chest diseases, at the Brompton Hospital, February 11th to 16th, all day; gynaecology, at the Chelsea Hospital for Women, February 11th to 23rd, all day; an evening clinical and pathological M.R.C.P. course, at the National Temperance Hospital, on Tuesdays and Thursdays at 8 p.m., February 19th to March 7th; medicine and surgery, at the Prince of Wales's Hospital, February 25th to March 9th, all day; and week-end courses in physical medicine, at the St. John Clinic and Institute of Physical Medicine, February 9th and 10th; children's diseases, at the Princess Elizabeth of York Hospital for Children, March 2nd and 3rd; clinical surgery, at the Royal Albert Dock Hospital, March 9th and 10th. These courses are open only to members and associates of the Fellowship, from whom full details may be obtained.

The Lent session of the South-West London Post-Graduate Association opens at St. James's Hospital, Ouseley Road, Balham, S.W., on February 6th, and will be continued on Wednesdays, at 4 p.m., till March 27th. Details will be given week by week in the diary column of our *Supplement*.

A new post-graduate course opened at the National Hospital, Queen Square, W.C.1, on January 28th, and will be continued till Friday, March 29th. The course includes: out-patient clinics, lectures and clinical demonstrations on each week-day, except Saturday, at 2 p.m. and 3.30 p.m. respectively; demonstrations on the pathology of the nervous system, on Wednesdays and Thursdays at 12 noon; and demonstrations on the anatomy and physiology of the nervous system, on Mondays at 9.30 a.m. and on Tuesdays at 5 p.m. The fee for the course is £10 10s., and for clinical clerks or those who hold perpetual tickets £8 8s. Special arrangements will be made for those who cannot take the whole course.

At the invitation of the Joint Tuberculosis Council Dr. Peter W. Edwards, medical superintendent, Cheshire Joint Sanatorium, near Market Drayton, Salop, is prepared to continue his series of short, intensive post-graduate courses of a practical nature on modern methods of therapy in tuberculosis of the respiratory system, with special reference to collapse therapy. Methods of Sanatorium administration will also be demonstrated. Suitable arrangements for board and residence can be made within a convenient distance of the sanatorium. Details of dates, expenses, etc., will be sent on application being made to the honorary secretary for post-graduate courses, Dr. William Brand, Pembury, The Drive, Rickmansworth, Herts.

The memory of the great physiologist Claude Bernard, the author of *Introduction to the Study of Experimental Medicine*, was recently honoured at a reception given at the Collège de France, when addresses were delivered by Professors A. Mayer and D'Arsonval, and a visit paid to Claude Bernard's laboratory, in which his table, instruments, and manuscripts are preserved.

The *Canadian Medical Association Journal* for January contains an account of the conferment upon Sir Henry Dale of the honorary degree of Doctor of Laws by the University of Toronto. The president, Dr. H. J. Cody, recalled that Sir Henry had been in close touch with the University ever since the discovery of insulin by Banting and Best.

By the Public Health (Smoke Abatement) Act, 1926, power is given to the Minister of Health to make orders extending the provisions of the Alkali, etc., Works Regulation Act, 1906. In the exercise of this power an order was issued in 1928 extending the list of noxious or offensive gases mentioned in the Act of 1906, and extending the list of scheduled works requiring registration. A draft order has now been prepared further extending the list of such gases and works ; copies may be seen at the Ministry of Health, Whitehall, S.W., or be purchased through any bookseller from H.M. Stationery Office. A public inquiry into the subject-matter of the draft order will be held at the Ministry on February 6th, at 11 a.m. Any person interested may attend and give evidence.

Dr. H. N. Stafford (Inner Temple) and Dr. Mary C. Sheppard and Dr. H. E. Marsden (Gray's Inn) were called to the Bar on January 28th.

Dr. Meige, the well-known neurologist, has been elected a member of the Académie de Médecine. Dr. Vreven has been elected President of the Belgian Royal Academy of Medicine for 1935.

Dr. Herbert Pernice, director of the Berlin University Institute for Industrial Diseases, has organized a public health exhibition for the medical profession of Iceland at Reykjavik, where he will deliver a course of lectures.

The ninth International Congress of Military Medicine and Pharmacy will be held in Rumania this spring.

Dr. Louis Martin, director of the Pasteur Institute of Paris, has been nominated president of the French Superior Council of Public Health, in succession to the late Professor Léon Bernard.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, B.M.A. House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs. Authors over-seas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBER** of the British Medical Association and the *British Medical Journal* is EUSTON 2111 (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:
EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Medisecra Westcent, London.*

The address of the Irish Office of the British Medical Association is 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin* ; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh* ; telephone: 24361 Edinburgh).

QUERIES AND ANSWERS

Offensive Breath

Dr. J. FINER, asking for advice, writes: I have a patient, a female aged 43, who has for the last five years complained of an offensive taste in her mouth and foul breath. Her teeth have been overhauled, her tonsils and adenoids removed, and colonic irrigation performed. Fractional gastric analysis has been found normal, and I am unable to make a definite diagnosis or to institute successful treatment.

New Cars for Old

"R. L. C." writes: I would be grateful if any of your readers could advise me if, in their experience, it is generally more satisfactory as well as economical to get a new car every year instead of waiting until the one in use is no longer roadworthy. I have a Morris coupé, 1929 ; it has done well for five years, and its value now is £15. I must get a new car very shortly, and as I am told that quite a number of doctors find the new-car-each-year system more economical in the long run I would be very glad of some advice on the point.

Oedema of One Arm: ? Cause

Dr. HUGH SMITH (Oxton, Birkenhead) writes in reply to Dr. H. B. A. Ratcliffe-Densham (January 19th, p. 137), who asked for suggestions in the treatment of oedema of the arm (cause yet unknown): I suggest he tries a method which I devised for a patient who had marked oedema of the left arm, including the dorsum of the hand, which followed a radical operation of the breast and axillary gland excision. In this case a reduction of the whole arm to nearly normal proportions was obtained. Records of the measurements before and after treatment have been kept for reference. I first tried bandaging the entire arm with a 3-inch elastoplast bandage. This proved encouraging, but owing to the sensitive skin overlying water-logged tissues an eczematous condition resulted. This settled down by suitable treatment. I next tried a flesh-coloured elastocrêpe bandage, which gave excellent results. This bandage was firmly applied from the metacarpo-phalangeal joints to the top of the arm, overlapping each turn of the bandage by about half its width. The arm soon became almost normal in size and the patient much relieved. The swelling of the arm could be controlled after a while if the bandage was kept on for the best part of the day and removed at night-time. An attempt was made to maintain the arm in normal dimensions by the use of a flesh-coloured elastic armlet, which I had had made by a local firm. The patient did not persevere with this, although I believe it will be found of use in other cases. I shall be interested to hear if this method has been used by others, and if found satisfactory in this particular case.

Open Suprapubic Wound

Mr. G. PERCIVAL MILLS (Birmingham) writes in reply to "Inquirer" (January 19th, p. 137): Heat an ordinary probe in a Bunsen burner and stroke it along a stick of silver nitrate so that the fused caustic adheres to the probe for a length of two inches. Then insert the probe into the sinus as deeply as possible. Put on a rubber strapping dressing and tie in a catheter for a week. After such a long period closure is unlikely without some such active treatment.

Colostomy

Dr. JOHN LIVINGSTON (Barrow-in-Furness) writes in answer to the inquiry by "M." (January 26th, p. 187): A patient of mine on whom I did an excision of the rectum two years ago gets along quite comfortably with a piece of cotton-wool held over the colostomy opening by means of a 6-inch-wide binder of stout elastic webbing, which she fixes with two safety-pins.

Income Tax

Dispositions in Favour of Children

"A. M." refers to the method of saving income tax by forming trusts for the benefit of one's children, and asks for advice, as the scheme seems too easy and simple to be safe.

*** Broadly, the idea behind such schemes is to put a child in beneficial ownership of income and then claim exemption, on the ground that the child has an income which is under the exemption limit of £100 or entitled to "personal allowances." If the income exceeds £50 the effect is to cancel the "child allowance," which the parent would otherwise have had. Dispositions in favour of children of the person disposing of the legal title to the income are specially dealt with in Section 20 of the Finance Act of 1922, which sets up various restrictions on their application to income tax. Probably it would be unwise for anyone not having an expert knowledge of those provisions to attempt to draft a suitable deed transferring legal rights in income to a minor, otherwise it might prove that, although a legal right had been conferred, the deed was "caught" by the section and was inoperative for income tax purposes. The income transferred may, of course, be of any nature, including earnings.

"Old Age Relief"—Professional Accommodation

"VIATOR" asks what special allowance can be claimed by a man over 65 years of age; also, whether he can treat as a professional expense the rent (£15) paid for a waiting room and surgery used solely for professional purposes.

*** The allowance in question consists in granting the earned income relief—that is, 1/5—to "unearned"—that is, investment—income as well. This does not necessarily mean that no portion of the income is taxable at the full standard rate. The rent of £15 can properly be treated as a professional expense.

Retirement on December 31st

"X. Y. Z." inquires as to the position of a practitioner retiring on December 31st, 1934.

*** The assessments for the two years to April 5th, 1934 and 1935, will have been made on the amount of the profits of the two years to December 31st, 1932 and 1933, respectively. Prima facie, "X. Y. Z." will be liable to account for tax on the assessment made for 1933–4 as it stands, and for tax on three-quarters of the assessment for 1934–5. If, however, his profits were higher in the last two years, the assessments for the period from April 5th, 1933, to December 31st, 1934, can be increased to the actual amount of the earnings for those periods. The final result is that tax is paid for the same number of years as that for which profits have been earned.

Earned Income Relief—Interest Paid

"A. B." has a professional income of (say) £2,000, out of which he pays £200 interest on a loan. The £200 has been deducted from the assessment in calculating the earned income relief.

*** That is correct; the tax which "A. B." pays on £200 of his profits is really tax on the income of the lender, for which "A. B." acts as a sort of collector, and "A. B." cannot be given relief on income which really belongs to someone else. In point of fact, the maximum earned income relief is £300—that is, one-fifth of the £1,500—so that on the figures quoted above the point should not arise.

Hospital Honorarium

"HONORARIUM" is in private practice, and receives an honorarium as radiologist to a local hospital. Is it liable to income tax?

*** Yes. The essential point is that the amount of the honorarium is paid and received for professional services, and it is liable to assessment in our correspondent's hands, even though he may have no legal title to it. Probably the best method of dealing with it will be to include it as part of the general earnings of the practice.

Child Allowance

"PATER'S" first child was born on December 17th, 1934. From what date is he entitled to claim relief?

*** The statute requires that the claimant shall have "living at any time within the year of assessment any child who . . . etc." Pater is accordingly entitled to income tax relief on £50 for the financial year 1934–5, and should apply to have his assessment amended accordingly.

LETTERS, NOTES, ETC.

Unbalanced Fat-albumin Metabolism

Dr. C. W. A. EMERY (Westcliff-on-Sea) writes: That skin cells obtain their main food supplies from underlying fats can hardly be doubted, and that the key substance, or enzyme, necessary to this end will differ in either amount or potency in different individuals is likely. Two distinct groups of patients are observable as a result—one in which we see a smooth, shining, "soap-doll-like" skin, and the other presenting a dry, parchment, sometimes scaly appearance. Naturally, there are intermediate stages. The former type is an example of excess skin-food formation, and the patient shows a liability to tuberculosis and sepsis, while the latter exhibits a deficiency in this substance and a tendency to cancer. The "excess" class, where the skin-food metabolic changes proceed too freely, show the tuberculous and septic diathetic state, and further to add to the preponderance of this "food" by a dietary of egg-white, milk, malt, etc., in treatment must be wrong. Egg-white is an excellent laboratory culture medium for the tubercle bacillus. Nature endeavours to inhibit the growth of the tubercle bacillus by getting rid of body fats, as shown in the initial drop in weight. Do not "antidote" Nature. If these and similar substances are removed from the diet in a case of early phthisis, and inoculation against sepsis is given, the growth of the bacillus will be inhibited and results be much improved. The initial drop in body weight is not to be confused with the secondary drop, which occurs after body reaction has been antidoted by dieting, as I have explained, and constitutes a serious crisis. This "excess" condition is a chronic one. There are acute forms, one example of which is the easily recurrent bronchitis of children, which responds at once to this diet adjustment; but a more important one is that which occurs in the puerperium, when the chemistry of milk formation is proceeding. An unbalanced state of fat-albumin metabolism exists which may have been rendered further unstable by the giving of milk-egg foods for some time previously, and so, a perfect culture medium being suddenly provided, any tuberculous or septic foci will "light up." In the prevention of puerperal sepsis all cases of pregnancy should be inoculated against sepsis, septic foci located, and eggs and milk and their various combinations removed from the diet in the last three weeks. In the second class of case, the "deficiency" class, note the tendency of epithelial cells, proliferating from any cause, to spread into deeper tissue, where there is no protective blanketing by fat layers. One may assume that they are searching for their natural food, which is obtainable to some extent in other environment. I think that this skin food can be produced by skin irritation, as in blistering (that is, in a normal subject), and that it is produced by the burning action of radium in those cases where a little success is claimed. I am extremely interested to learn the effect of "blister" fluid from a normal individual on a cancerous growth. I would welcome the opinions of other general practitioners on these unbalanced fat-albumin metabolic states.

Vagitus Uterinus

Dr. ERIC B. HICKSON (Chippenham, Wilts) writes: The following case may be of some interest. The patient, a young woman with large pelvic measurements, had had one normal confinement eighteen months previously. After rupture of the membranes there was no advance, and on vaginal examination I found a brow presentation. This was turned into a face, and I was about to withdraw my fingers when I was startled to hear a definite cry from the child. This was quite distinct, and heard by the nurse, the patient, and myself. I separated my two fingers as widely as possible and mopped out the liquor. I could then just see the child's mouth moving. From the formation of bubbles when a little liquor covered the mouth it was quite obvious that the child was breathing regularly. Every three or four breaths it gave a little cry. Not having anticipated any trouble I had not boiled up my forceps. As it appeared that the child was in imminent danger of drowning I told the nurse to press on the fundus, and kept the airway open digitally and by continuous swabbing. Fortunately the patient was having good contractions, and after twenty minutes the face was presenting at the vulva. During this time the child breathed regularly and cried frequently. It was born easily and was not cyanosed. The cord was pulsating normally. The child is now nearly 3 months old, and has developed well.

Chloramine Antiseptics

Boots Pure Drug Co. Ltd. have just produced a pamphlet entitled "Chloramine Antiseptics," for the information of members of the medical profession. Details are given in a concise form relating to chloramine-T, dichloramine-T, and halazone. Aqueous solutions of chloramine-T have a very wide sphere of usefulness in the treatment of external infective conditions, and dichloramine-T where a solution in oil is indicated; halazone tablets are meant for sterilizing small quantities of drinking-water. Copies of the pamphlet are obtainable from Boots Pure Drug Co. Ltd., Wholesale and Export Department, Station Street, Nottingham.

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 51, 52, 53, 54, 55, and 58 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 56 and 57.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 44.